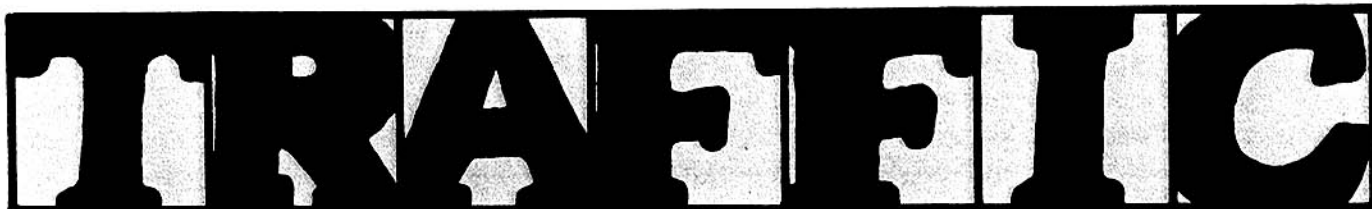


\*FM 19-25

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, DC, 30 September 1977

## Military Police



## Operations

1977 Edition

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

\*This FM supersedes FM 19-21, 30 October 1973; FM 19-25, 1 December 1971 including all changes; and FM 19-26, 15 December 1975.

An Army Training Literature Production  
By the U.S. Army Military Police School  
Fort McClellan, Alabama

FM 19-25  
30 September 1977

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## **Introduction**

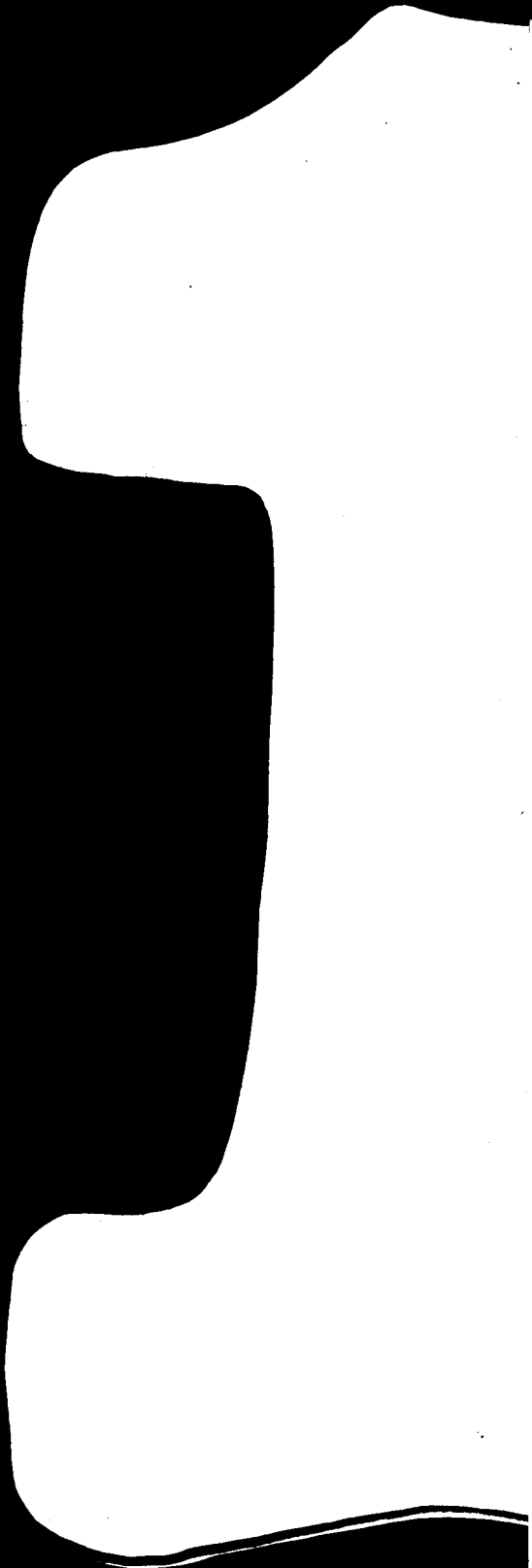
This manual presents current Military Police doctrine for traffic operations in garrison and combat environments. The expertise developed through proper performance of installation traffic operations will provide a sound base for undertaking combat traffic operations. On the modern, highly mobile battlefield, with day and night operations, demands for proper traffic control will be imperative. Unless personnel and materiel can be moved forward, laterally, and retrograde, and lines of communication are kept responsive, combined arms teams will not be successful on the battlefield.



You, the user of this publication, are the most important element in keeping it current and viable. We encourage you to submit at any time your comments or recommendations on this publication. Please key your comments to the specific page and line of the text which you feel needs improvement. You should provide reasons for each comment made to insure complete understanding and evaluation. Make your comments on DA Form 2028, Recommended Changes to Publications, and forward to: Commandant, US Army Military Police School, ATTN: ATZN-TDP-C, Fort McClellan, AL 36205. Every comment will be considered.

The word "he" in this publication is intended to include both the masculine and feminine genders and exception to this will be so noted.

# Installation Traffic Control







## Objectives And Responsibilities

The objective of military traffic control is to attain **maximum flow with minimum control and direction.**

The following functions are essential to attaining this objective:

- Engineering
- Education
- Law
- Planning
- Enforcement

The **provost marshal** has the following responsibilities:

- Prepare plans, policies and procedures for traffic control.
- Prepare the traffic control plan.
- Coordinate traffic control activities with other headquarters, staff offices and civil authorities.

- Provide timely information to commanders about MP assistance they may expect during road movements.
- Implement plans and policies concerning traffic accident investigation and prevention.
- Implement traffic control studies and surveys.
- Implement necessary traffic enforcement programs.
- Assist in implementing traffic education/safety programs.
- Provide a permanent representative to the highway traffic headquarters in the theater of operations.
- Supervise circulation control activities in a tactical environment.

The **role of the Military Police** in traffic control operations is to:

- Enforce traffic laws, regulations and orders.

- Recommend type and location of traffic control devices.
- Assist in accident prevention and vehicle safety programs.
- Investigate and report traffic accidents.
- Operate traffic control points (on the installation) and circulation control points (in the theater of operations).
- Report information concerning traffic and road

usage, progress of movements; perform hasty route reconnaissance; and relay any information of intelligence value.

- Be prepared to implement alternate or temporary routes for traffic.
- Actively participate in rear area protection and disaster control operations.
- Perform traffic escort and convoy escort duties.
- Perform other duties involving security, law enforcement and crime prevention.



## Supervision And Planning Principles

### Supervision

Supervision of traffic operations is a responsibility shared by individual MPs, patrol supervisors, desk sergeants, MP duty officers (MPDOS) and the provost marshal (PM). All personnel involved in traffic operations must accomplish the following

- Evaluate traffic plans efficiency and make recommendations for improvement.
- Maintain safe and efficient flow of traffic along roadways.
- Recognize and correct traffic problems.
- Provide security and safety requirements at traffic accident scenes.
- Prepare and review traffic accident reports.

- Perform traffic law enforcement activities.

The MP supervisor acts as a coordinator of all traffic activities during a given time. Teamwork among all on-duty MPs is imperative. In areas where there are not adequate standing policies, the supervisor must provide guidance on the spot. This guidance may be needed in the following situations:

- Fixed traffic points
- Construction sites
- Detour sites
- Accident scenes
- Special events
- Escort duties
- Disaster operations.

## Supervisor Responsibilities

### Fixed Traffic Points

- Main roads are well defined
- Flow pattern is established
- MPs know how to change traffic flow if necessary
- Conflicts between MP and control devices are resolved

### Construction & Detour Sites

- Implement adequate control measures to prevent congestion

### Accident Scenes

- Coordinate all MP actions at the scene
- Safety measures are established
- Injured persons are cared for (to include first aid)
- Scene is protected

### Escort Duties

- Road ahead is cleared for escorted personnel
- Establish communications with escorted vehicle(s)
- For classified material—use best control for defense and security, normally by following immediately behind escorted vehicle

### During Disasters

- Area has adequate patrol coverage and traffic control to expedite relief operations and the movement of heavy traffic, evacuation and medical vehicles

### Special Events

- MPs know traffic plan and schedule of events
- All Military Police actions are coordinated

## Planning

The following principles of traffic planning should be considered when establishing traffic control operations.

### Functional Areas

Such areas on an installation may include the headquarters, residential, barracks and commercial areas. The following actions will insure their integrity:

- Concentrate traffic on a minimum number of well-defined, easily controlled routes.
- Direct traffic around—not through—functional areas.
- Attempt to have separate routes leading to different functional areas.
- Establish direct routes for heavy traffic from off post to locations on post.

### Traffic Load

Traffic on roadways should be reduced to avoid congestion. Some proven techniques are:

- Stagger work hours with minimum 15-minute time separation.
- Encourage use of car pools.
- Improve and encourage use of public transportation.
- Restrict the volume of vehicles, if necessary.

### Primary Circulation System

The traffic plan should establish major routes to bear most of the traffic load. **Primary routes should pass around** the borders of **functional areas** to preserve area integrity. **Interconnecting routes should also skirt** the boundaries of major areas. To discourage unnecessary use of **roads in troop or residential areas**, make the

roads **circuitous or dead end**. **One-way roads reduce accidents.**

### One-Way Reversible Roads

One-way roads may improve traffic flow, especially if reversible—one-way in for mornings and one-way out for afternoon. Narrow roads can carry a **greater volume of one-way traffic** than two-way. One-way roads help **reduce congestion at intersections** where there are many left hand turns or accidents. **Temporary one-way roads** during morning and evening rush hours may reduce congestion and increase traffic flow. **Eliminating curb parking on two-way roads** may eliminate the need to establish one-way roads.

### Speed Zones

Speed zones should be determined by the areas the road passes through. Consider the following criteria before setting speed limits:

- Each speed limit should safely handle traffic, allowing for sufficient stopping distance between hazards.
- Maximum speeds should follow the 85th percentile rule, and minimum speeds should follow the 15th percentile rule (see Speed Studies, Chapter 22).
- Reasonable speed limits encourage driver compliance.
- Adopt the Uniform Vehicle Code 30 mph speed or the state assimilated speed for urban type roadways.
- Unnecessarily restrictive speeds may be ignored by drivers, requiring greater and unnecessary enforcement efforts.

### Safety Measures

Reviews of traffic studies, patrol reports, and accident investigations may lead to recommenda-



tions for improving traffic safety. Such recommendations include:

- Install traffic control devices at intersections, curves, hills, etc.
- Improve street lighting.
- Improve information and education programs directed at drivers.
- Improve parking capabilities (off-street parking is better than on-street parking).
- Improve pedestrian controls by installing traffic signals, fences and islands.
- Repair signs and signals and repaint pavement markings.
- Install force arrestors (such as water bumpers, metal drums with sand or water ballast).

## Special Events

Special events often generate heavy traffic volume. Traffic control is possible with planning based on the following considerations:

Routes to the event should be direct.

Main routes should terminate at parking areas.

Special routes should be marked for emergency vehicles and operators briefed on these routes.

A special traffic plan should be publicized through the installation bulletin and leaflets.

Normal traffic should be detoured around the area.

Directions and guide signs should be used extensively.

## Disasters

MP planning support to local police during disasters should consider the following:

- Establish primary route for vehicles aiding evacuation, recovery and reestablishment of disaster areas.
- Establish information points at main entry routes to the disaster area.
- Prohibit unnecessary traffic (onlookers).
- Direct normal and unnecessary traffic around the disaster area.
- Establish a communications net.

**Military Police must be concerned with provisions of the Posse Comitatus Act during off-post disaster operations. Consult your local staff judge advocate office for details.**



## Operations

**The principles discussed here are generally applicable in peacetime and in combat, with only necessary changes required in specific situations.**

### Checkpoints

**Checkpoints are used to:**

Insure proper use of routes.

Check vehicles for safety deficiencies.

Prevent illegal removal of government property.

Enforce post regulations and drivers license requirements.

Prevent unlawful entry onto the installation.

Check validity of orders, passes, off-post dispatches and identification cards.

Seize contraband and identify DWI suspects.

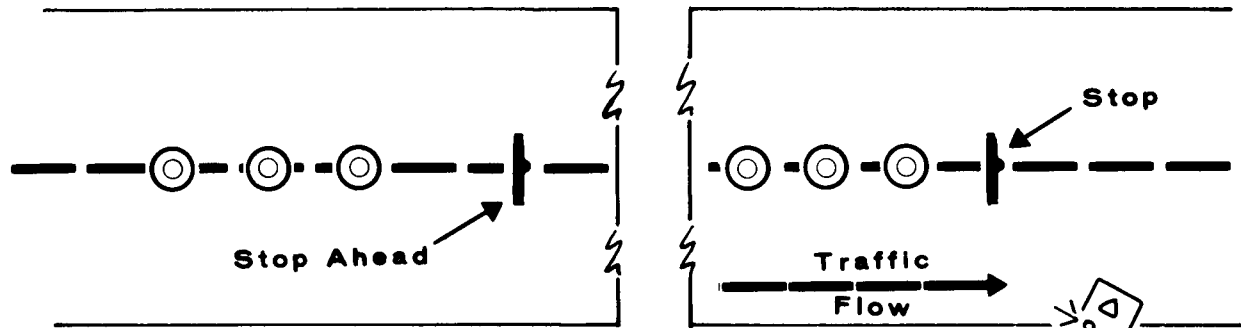
### How-To

A checkpoint should be **hidden fom distant view** to prevent approaching vehicles from taking evasive action. However, it should not be positioned so that it is a sudden surprise to motorists. A driver should have time to see the checkpoint and stop safely.

There should bean area available where **vehicles can be moved off the main roadway.**

**Immediate approach lanes should be outlined** with traffic cones, stakes, engineer tape, instructional signs, etc.

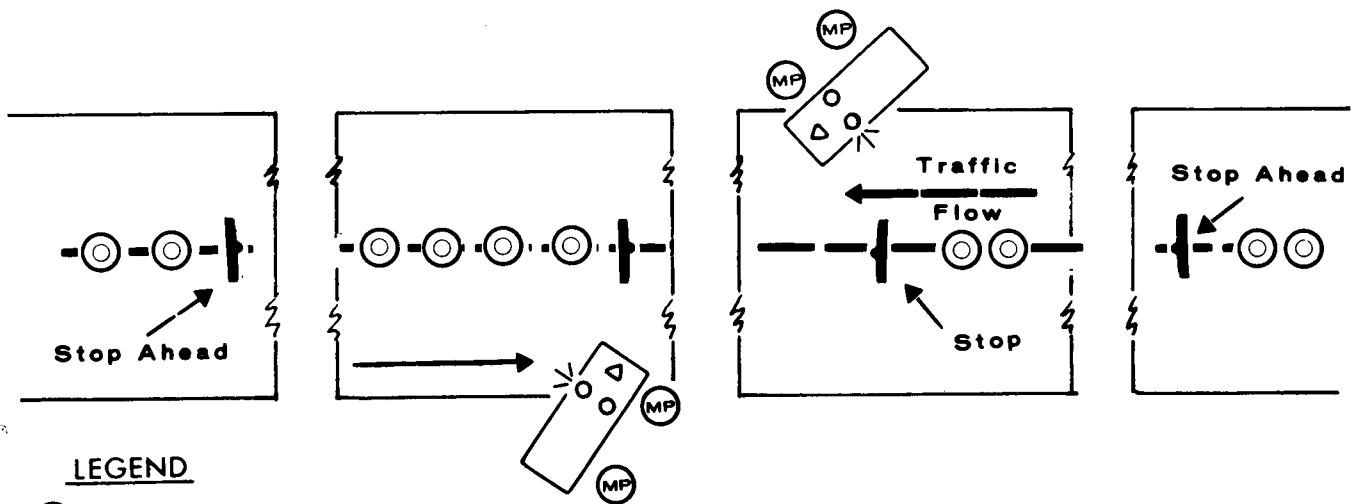




**LEGEND**

- CONE
- MP MILITARY POLICE
- ┃ SIGN

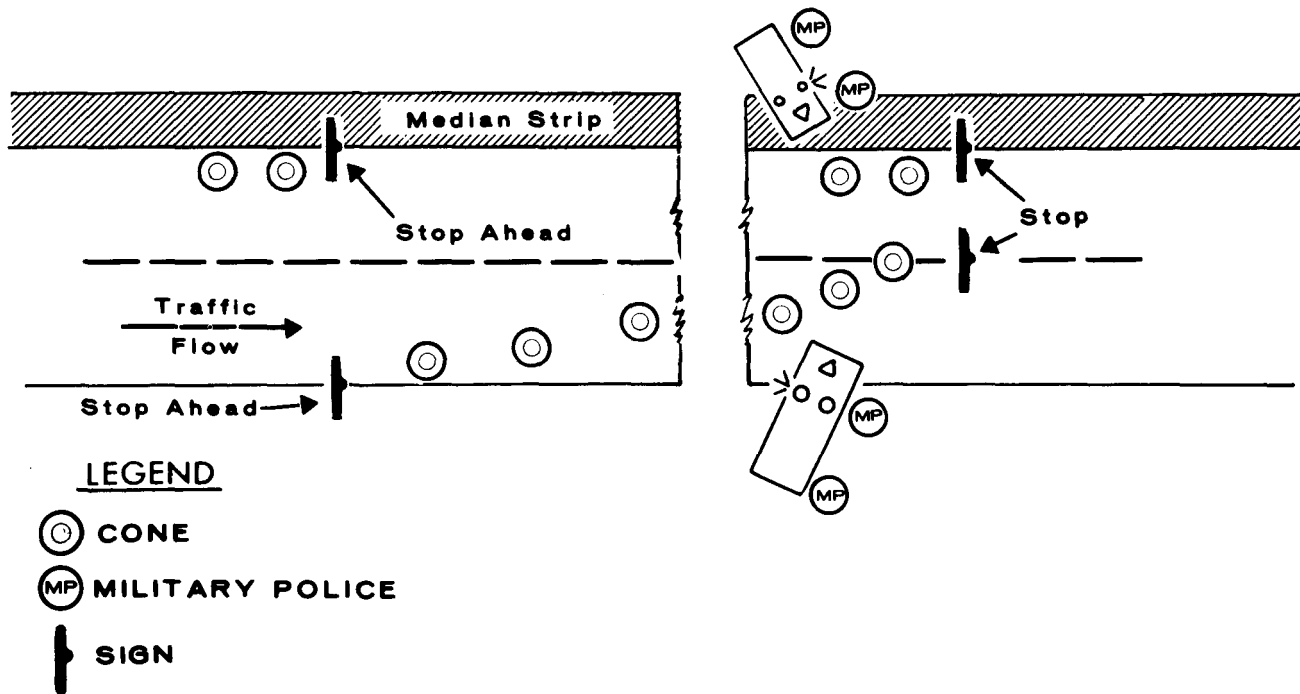
*How To Stop Traffic From One Direction Only*



**LEGEND**

- CONE
- MP MILITARY POLICE
- ┃ SIGN

*How To Stop Traffic From Two Directions*



*Multilane Roadblock Setup*

warning signs should be used. **On multilane roads**, all traffic should be forced into one lane of traffic.

A **patrol vehicle** should be **ready to pursue** a motorist who runs the roadblock.

If **searches or interrogations** are anticipated, there should be an area for vehicles to be pulled over. If a search is to be conducted, all MPs must know precisely what they are looking for.

Attention to barricading the **roadway shoulders or ditches** should be considered if it is possible to drive through these.

## Administrative Dismount Points

Administrative dismount points are areas established where personnel are required to dismount from their vehicles and proceed on foot. Only preselected and designated vehicles are permitted to proceed beyond the dismount point.

## When and Where

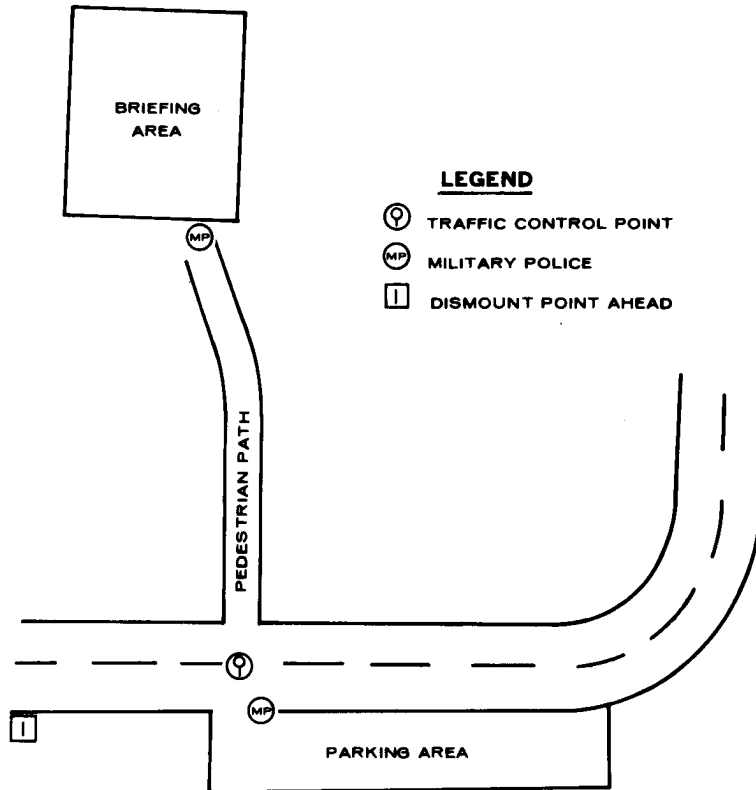
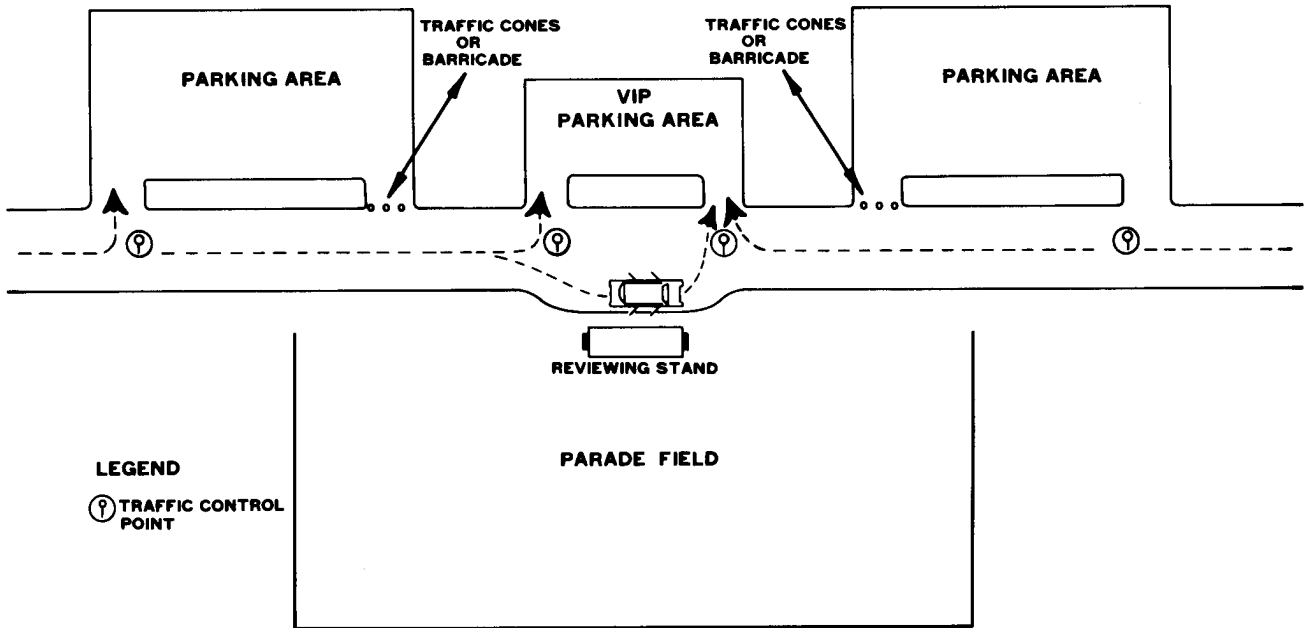
These dismount points are most commonly seen at special events such as parades, ceremonies and briefings.

## Why

One function of administrative dismount points is to direct traffic in and out of designated areas. Another is to insure that all vehicles park in specified areas. They also prevent unauthorized persons from entering restricted areas.

## How-To

To operate a successful dismount point, first **survey the proposed location**. Can it stop the traffic flow near the desired location? Is it relatively near the final destination of personnel?



*Two Examples of Administrative Dismount Points*

You should also establish a **distinct parking area** to include entrance(s); exit(s), and directional signs.

Provide **sufficient personnel** to control the traffic flow.

Remember to brief Military Police so they may provide information.

## Detour Sites

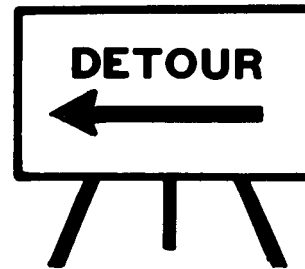
On an installation, traffic control at detour or construction sites may be required to avoid motorist confusion and congestion. Operation is the same as for a defile operation in a tactical environment. Normally, the organization doing the work at a site will provide its own control personnel. MPs advise and/or assist them, particularly during periods of heavy traffic.

## How-To

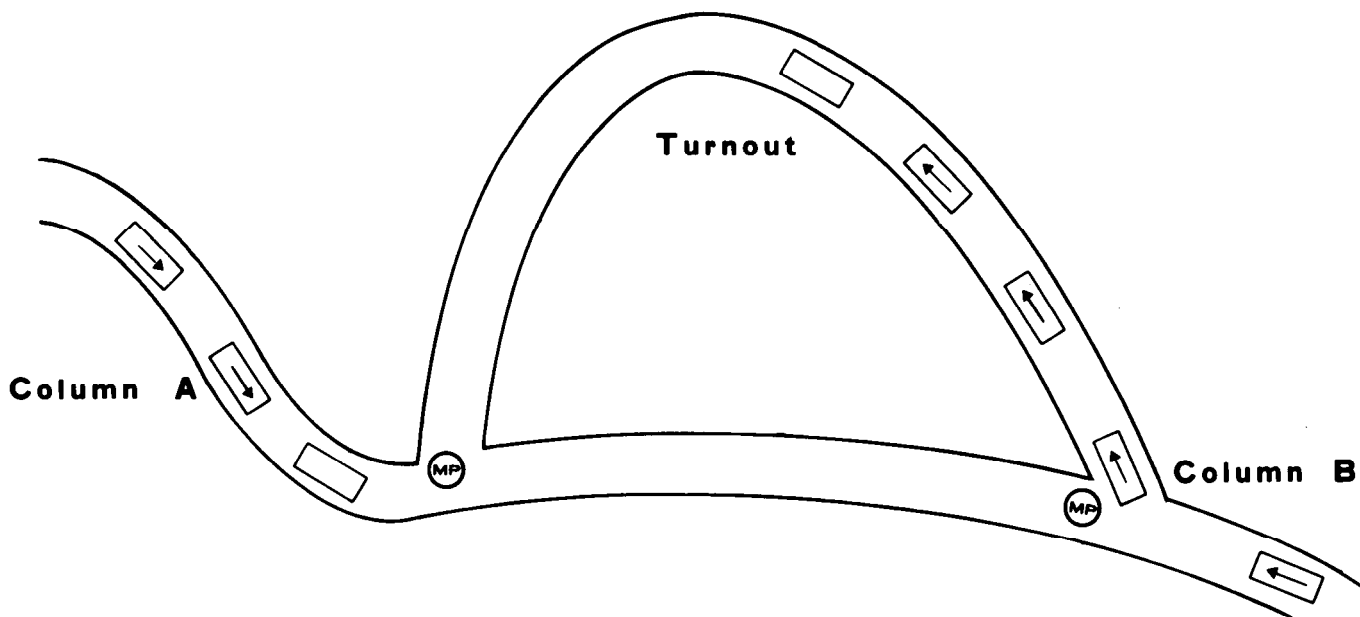
To operate a detour site, follow these guidelines:

- Route **traffic to the right side of the road** when possible.

- **Separate heavy traffic** such as trucks from passenger cars if the roadnet is limited or if bridges are restricted..
- **Reduce speed limits.**
- Actively **supervise traffic flow** to prevent the tendency of drivers to bunch up, which often causes rear end collisions.
- Identify and **mark alternate and by-pass routes well in advance**, so vehicle operators can avoid the detour area.
- Use one-way traffic if no by-pass is possible. Several methods of control are available. The most common are covered next.



*Detour Sign Used To Direct Traffic Around Accident or Fire*



*MPs Halt Column A and Direct Column B Into Turnout*

## Methods of Control

**Flags** The MP at one entrance to the detour gives a flag to the last vehicle operator in a group entering the detour, with instructions to return it to the MP at the other end. When this occurs, the other MP allows a new group of vehicles to enter and repeats the process.

**MP Rider** This is the same as the flag method, except that an MP rides in the last vehicle of each group continually repeating the process.

**Trail Vehicle** In this method a patrol vehicle follows each group and the operation is the same as above.

**Lead Vehicle** This method is operated the same also, except the patrol vehicle leads each group. This is effective when the detour is long or confusing. The MP acts as a guide.

**Turnout** A turnout is a side area of the road where a group of vehicles can turn off the road and allow another group to pass. If a detour is long, the use of a turnout allows vehicles to enter the area the same time from each end. The first group to reach the turnout pulls into it and waits. The second group passes in the opposite direction and then the first group may start again. This method requires that control personnel be stationed at both ends. A common problem is that vehicle breakdowns may occur on the travelled road, disrupting traffic flow.

## Parking

Parking control is necessary to avoid unnecessary congestion, abuse and accident hazards. **Indicators of a parking problem** include:

Excessive, illegal or overtime parking.

Excessive cruising to find parking space.

Extensive congestion in traffic flow near parking lots.

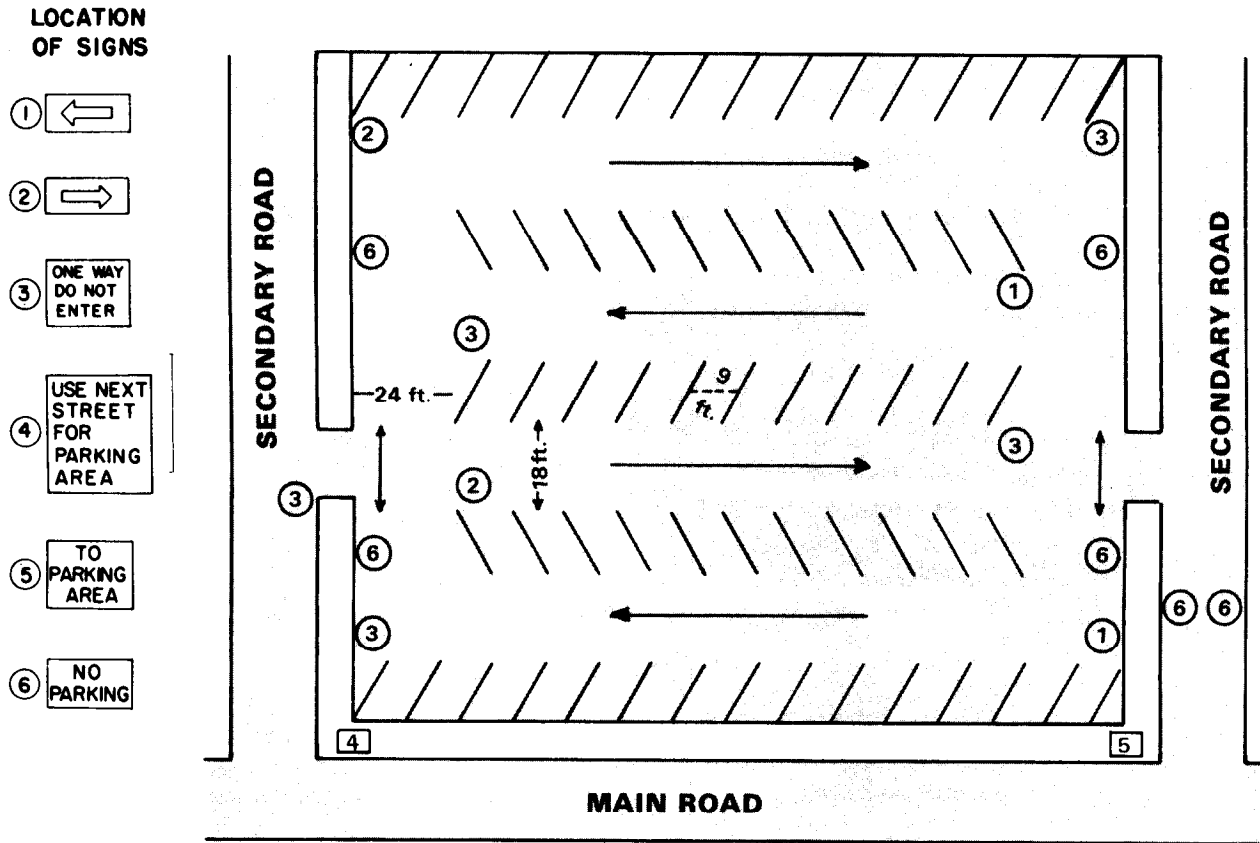
Parking in excess of 400 feet (120 meters) from a desired location.

**Permanent parking** facilities are developed as an integral part of the installation traffic and building plan.

**Temporary parking** may be required for special events. When selecting a site for temporary parking, you should follow these steps:

- Determine the **time** which the area will be needed.
- Determine the estimated **turnover rate** of vehicles.
- Survey the area to be used and mark off all areas within it which must be avoided, such as **holes or rocky areas**.
- Mark out the area to be used with signs or engineer tape.
- Establish clearly defined **entrance/exit locations**, preferably ones that border on secondary roads so congestion on primary roads is avoided.
- Determine **what type of parking** is to be used, such as head-in or 45-degree angle.
- Determine the areas to be set aside for **designated persons and VIPs**.
- Insure **traffic flow** within the lot is well defined. Use signs, tape and chalk. (See Parking Studies for a detailed explanation of lot types.)
- Insure the **surfaces** of parking areas will accommodate vehicular traffic in the event of inclement weather. Coordinate with engineer personnel.





*Examples of Temporary Parking Facility With a Turnover*

There are several general rules which improve parking procedures and areas. These are listed next for your planning and operational consideration. They are not firm or absolute, and adjustments may be necessary in any situation:

Ideally, no vehicle should be allowed to park on roadways as these are for movement. This is especially important on primary roads and in service or headquarters areas.

If on-street parking is allowed, it should be parallel parking, not angle parking. On-street parking should only be allowed on lightly travelled roadways.

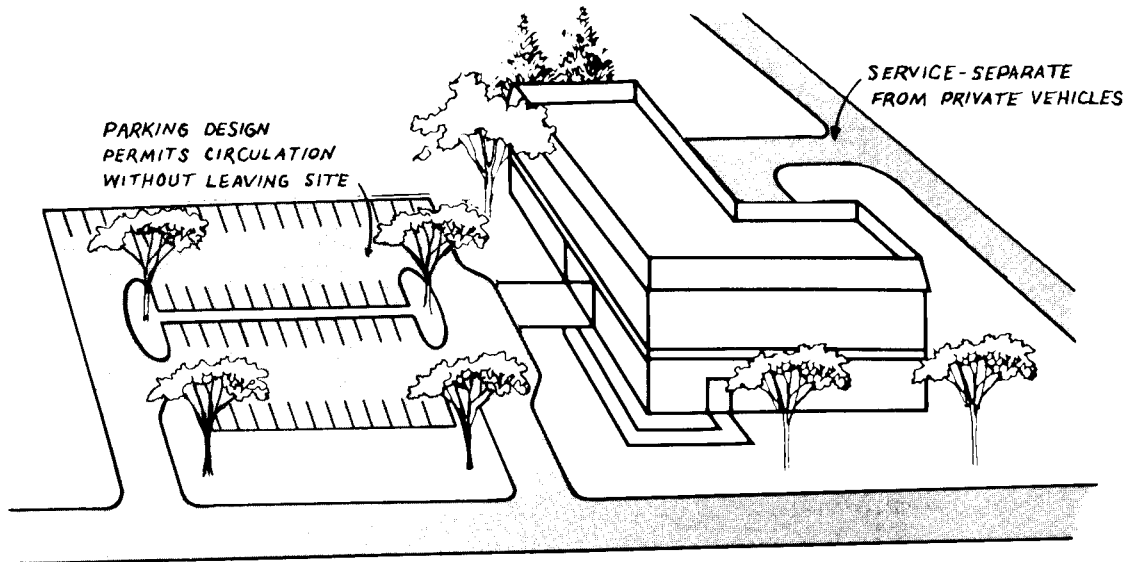
On-street parking must be prohibited near intersections. Parking should be prohibited 50 feet (15 meters) from crosswalks in each direction and at least 30 feet (9 meters) from stop signs. If 15 percent or more of the vehicles entering an intersection are making left turns, parking should be prohibited at least 150 feet (45 meters) from the intersection.

Parking lots should have a minimum of clearly designated entrances and exits. Too many entrances or exits lead to congestion. They should adjoin secondary streets, if possible, not primary roadways. They should never be placed near intersections.

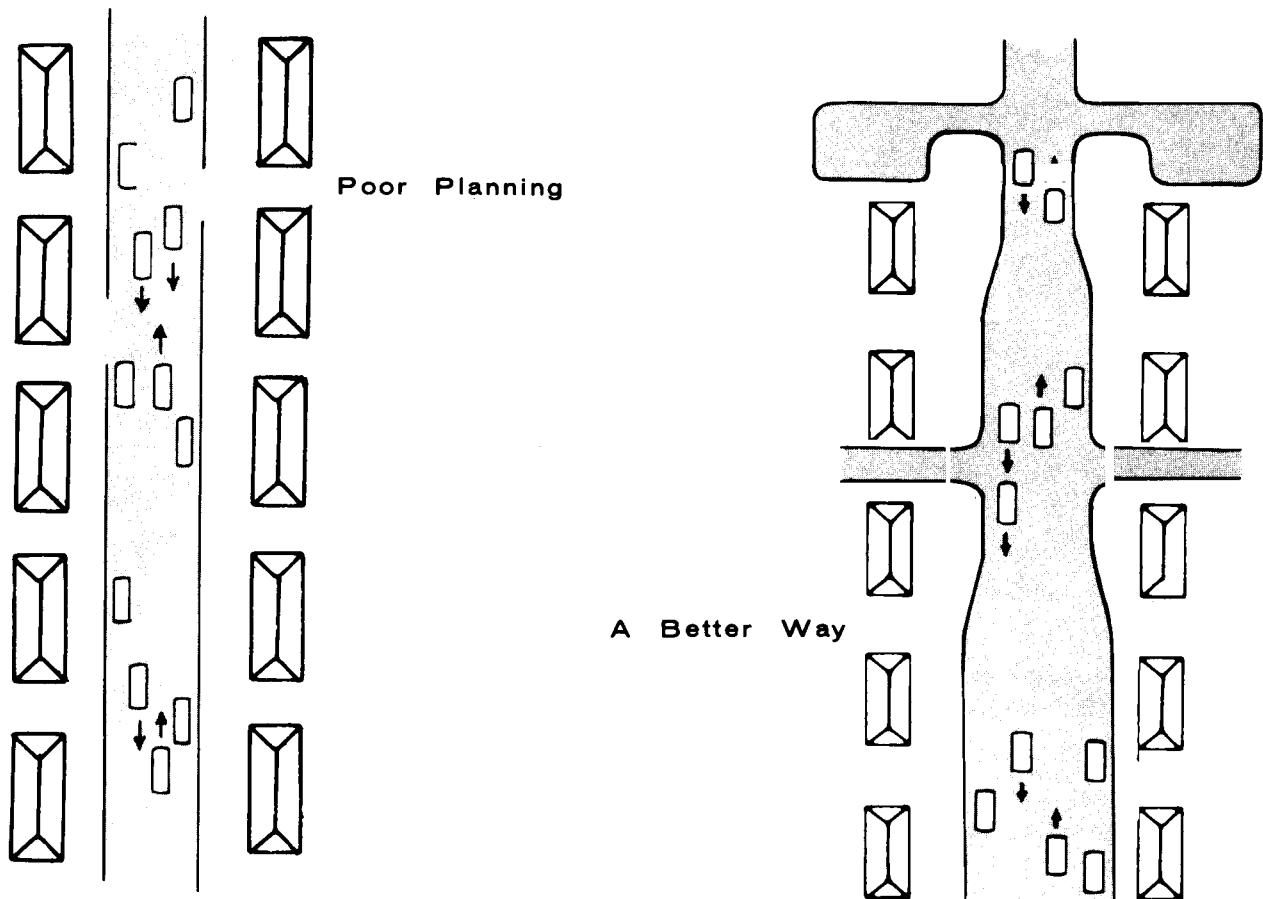
When planning parking lots, the flow of pedestrians inside the lot should not conflict with the main flow of vehicles.

Angle parking is more convenient to the driver than head-in parking, however, it requires greater control measures. The required circulation pattern must be one-way and clearly marked.

Parking lots should have a "reservoir space" immediately inside the exit area. It should be an area of 30 to 40 feet (9 to 12 meters) in which no parking is allowed. This allows for uncontested build-up of vehicles leaving the parking lot.



*Convenient Parking Designed for the Parking Demand*



*Parking in Housing Areas with Narrow Streets*





## Point Control

A traffic control point (TCP) is a designated spot on the ground or road network—in a static garrison type environment—where Military Police control the traffic flow.

The three goals in point control of traffic are **orderly movement** of traffic in accordance with traffic control plans, **no unnecessary traffic delays** and **minimum essential control methods**. These goals should be accomplished with maximum use of traffic control devices, relieving MPs of this duty when possible.

### When

Traffic control points should be used in the following situations:

- ▲ Road network is inadequate to accommodate traffic.

- ▲ Serious delays or congestion occur or are anticipated.
- ▲ Traffic studies indicate a particular need for control.
- ▲ Security of designated persons requires special control.
- ▲ Interruptions of traffic flow are reported to Military Police.
- ▲ A location becomes unsafe.

### How-To

**Preparation**– Military Police should receive all necessary **information** needed to perform their mission from supervisors, other MPs, personal observation and traffic studies.

**Safety equipment** should be provided and used. Common items are reflectorized crossbelts, vests,

sleevelets, flashlights, white gloves, whistles, platforms, temporary signs and traffic cones.

**Location**— In selecting a site for point control of traffic, the most important consideration is **be able to see all vehicles and insure they see you.**

The following factors affect MP location:

- ▶ Design of the intersection
- ▶ Traffic volume characteristics
- ▶ Light and weather conditions
- ▶ Degree of control required

**Extremely Reduced Visibility**— Supervisors must consider hazards to traffic and hazards to MP safety and decide whether to leave the MP at his post, or to use alternate control methods, such as safety flares.

**Hand Signals**— This is the most common method of directing traffic. Hand signals are standardized to accommodate drivers of NATO countries. Provost marshals may alter the signals to accommodate host country standards if necessary.

Hand signals must be **executed distinctly and deliberately.** Poorly executed signals only confuse drivers.

At night or during other low visibility periods, **flashlights or traffic batons** can be used but only if drivers commonly understand their use.

(See Appendix B for details on hand signals.)

**Whistle**— Whistles supplement visual signs in attracting a driver's attention. When used too frequently, their effectiveness declines.

The **standard whistle** signals are:

**STOP**— one long whistle.

**GO**— two short whistles.

**ATTENTION**— four or more short, sharp whistles.

### Controlling Traffic Effectively

To control and move traffic effectively the MP must follow these guidelines:

◆ Continually **observe traffic** for conflicts such as:

- Backed-up traffic lanes.
- Excessive changes in flow speed from slow to fast.
- Vehicles blocking intersections.

## Basic Rules For Executing Hand Signals

- Stand erect with feet 8 to 10 inches apart
- Let your arms hang naturally
- Distribute weight evenly on both feet
- Stand with shoulders parallel to moving traffic
- Look directly at driver to gain his or her attention before giving a signal
- Make sure traffic is stopped before changing direction of traffic flow

### Remember:

**Look**—at the traffic situation

**Execute**—the correct signal

**Complete**—the signal and make sure it's obeyed

- ◆ Firmly establish **personal control** by performing all signals and movements with precision and by insuring drivers obey signals.
- ◆ Give **priority to the major route**. All secondary road traffic moves during breaks in the major flow. If breaks do not occur, allow traffic to accumulate on secondary roads before directing it to move. Make changes in flow direction only when the intersection is clear.
- ◆ Insure heavy vehicles have sufficient **go time** to build up speed and sufficient **stop time** to slow down and stop.
- ◆ Allow **right turns** whenever they do not interfere with traffic flow and do not create danger for pedestrians.
- ◆ Make sure opposite lanes are stopped before allowing **left turns** to be made. It is best to permit left turns during natural breaks in the traffic flow.
- ◆ **Communicate** with MPs at other intersections and TCPs.
- ◆ If **congestion** occurs, hold other lanes until it is cleared.

- ◆ If **two lanes must merge**, alternate the traffic flow.
- ◆ If **exit lanes are filled**, prohibit further turning movements.

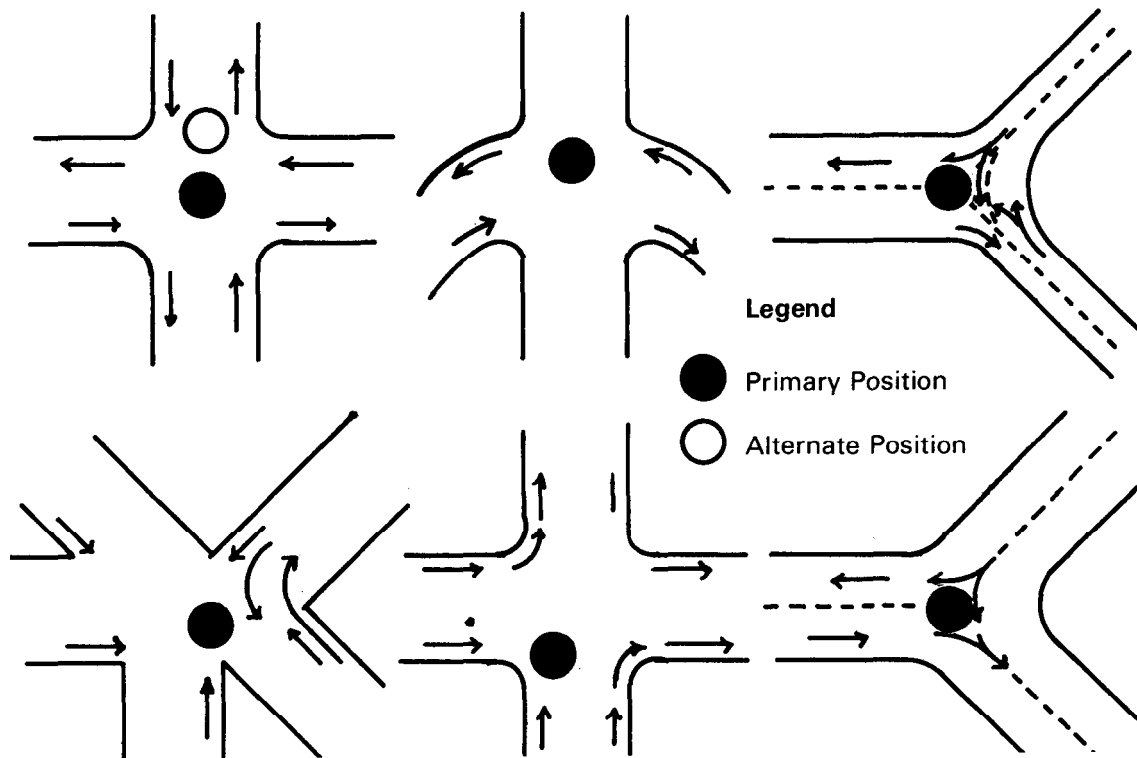
### Special Situations

Special attention must be given to TCPs at schools, hospitals, fire stations and special events.

The actions of **school children** are impulsive. Pay constant attention to their actions and allow them to cross streets only when orderly. Require drivers to move slowly and cautiously.

Sudden **emergency vehicle movements** are common at hospitals and fire stations. MPs on TCPs must quickly establish their presence to control traffic and prevent congestion and accidents.

MPs must be able to provide information at special events, since drivers may be unfamiliar with actions expected of them and rely on MPs for guidance and information.



*MP Positions at Intersections*

The position is not fixed, and the MP may move to meet traffic flow needs.





## Motor Patrol

Motor patrols greatly assist law enforcement efforts on military installations, particularly those with extensive road networks.

In traffic control, motor patrols are used to:

- ▼ Supply information, assistance and services.
- ▼ Investigate traffic accidents.
- ▼ Conduct traffic reconnaissance.
- ▼ Provide traffic escorts.
- ▼ Assist traffic control points (TCP).
- ▼ Encourage voluntary compliance with traffic laws.
- ▼ Enforce traffic regulations.
- ▼ Deter crime.

### Advantages

- Provide greater area coverage
- More people see and are aware of them
- Greater communication capability
- Quicker response time to emergencies

### Disadvantages

- ⊖ Less personal contact with the public as opposed to foot patrols
- ⊖ Traffic congestion can affect mobility and response



- ⊖ Generally makes a less detailed inspection of an area than a foot patrol
- ⊖ Vehicle breakdowns and serviceability requirements

## MP Vehicles

MPs use a variety of vehicles to accomplish their traffic missions. These include autos, motorcycles, trucks and aircraft.

The **MP sedan** is used for most installation traffic operations in CONUS and overseas areas.

**Motorcycles** are very effective vehicles in congested traffic because of their maneuverability. They should not be used during periods of inclement weather or when violator speeds are excessive. Also, there is little cargo space for safety or service equipment.

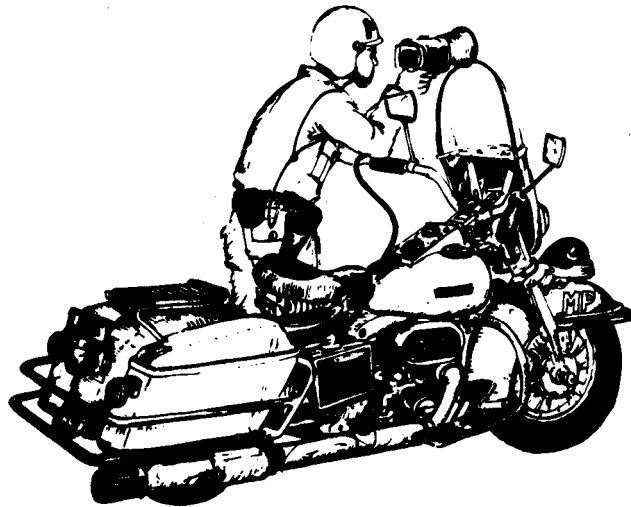
**Scooters or three-wheel (service model) motorcycles** possess the same favorable characteristics as motorcycles and should be considered for parking, law enforcement, and other traffic assignments in congested and headquarters areas. The attached carts provide space for safety, service and enforcement equipment.

**Vans and panel trucks** offer size and configuration for transportation of large amounts of safety and special investigation equipment, as well as a comfortable and protected area for conducting on-the-scene interviews.

**Pickup trucks** are particularly suitable for operations on ranges or in outlying areas where dirt and gravel roads are common.

The **quarter-ton utility truck** is required for support of tactical unit training missions. The jeep is a versatile vehicle especially suited to off-road MP operations. It should not be used as a primary patrol vehicle for continuous operations on paved surfaces.

**Aircraft**—fixed wing and helicopters—are useful for a number of traffic operations. These include:



*Military Police Motorcycle*

- General traffic observation and control
- Traffic law enforcement
- Emergency medical evacuation
- Transportation of personnel and equipment
- Disaster and emergency operations

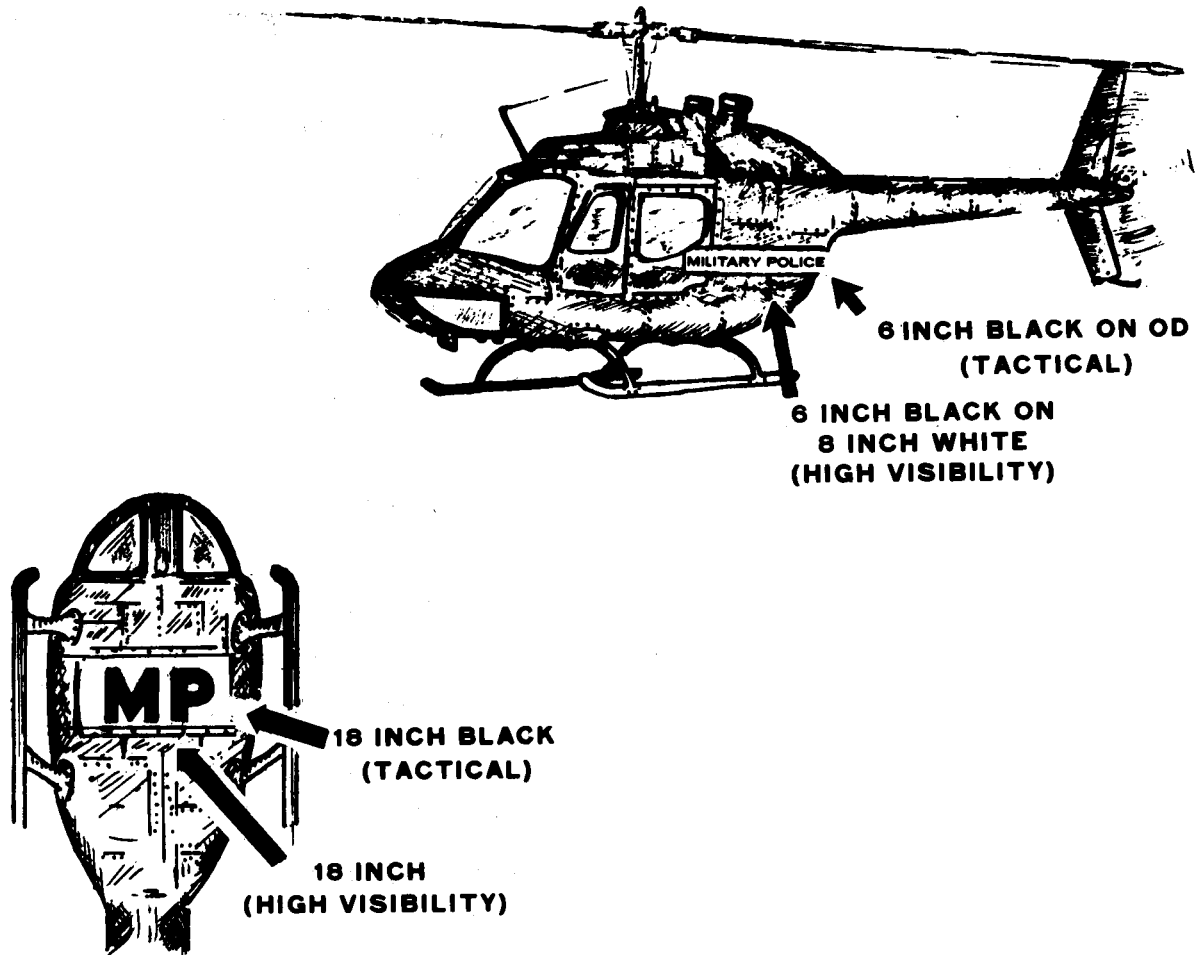
Aircraft used in MP traffic operations should be equipped with identification markings; searchlight; multichannel radio receiver and transmitter; public address system; siren; and emergency medical equipment.

## Methods

Normally, motor patrols are comprised of two MPs—a driver and a rider. The senior MP is normally the rider; however, driving duties may be alternated to avoid driver fatigue. There are two methods of mobile patrol. They are:

**Area patrol** may include several streets, roads, etc.

**Line patrol** is on a designated route between two points, usually on several heavily used connecting streets.



*Helicopter Markings (OH-6)*

## Mobile Patrols

Mobile patrols are useful in observing traffic flow, speed, possible congestion and in pursuing crime prevention activities. MP patrol vehicles should be driven in the right lane of traffic and should not exceed posted speed limits. The patrol which moves slower than the speed limit is able to better judge traffic and to observe the patrol area. Speeding creates a very poor public impression.

## Stationary Traffic Observation

MP patrols also perform stationary traffic observation (STO) at selected places (an intersection experiencing a high accident rate or a location with chronic congestion problems) to deter and detect traffic violations. This procedure (STO) includes monitoring the speed of passing vehicles with speed measuring devices.

**The MP goal is preventive enforcement by encouraging voluntary compliance with traffic laws.**

There are two methods of STO—conspicuous and visible.

**Conspicuous**—MPs endeavor to attract attention by remaining in full view of traffic with a marked vehicle.

**Visible**—MPs locate in full view of traffic, but in a manner that requires some scrutiny by a motorist to be discovered.

The most effective method of conducting motor patrol is a combination of stationary and mobile methods. The decision to move or to park should be based on known facts.

For example, intersection “A” has experienced several accidents recently between the hours of 1600 and 1645, which have been caused by failure to yield. A stationary patrol may be effective at that time and location, and could provide a reliable source of information for traffic control improvements.

While on motor patrol, MPs should be constantly alert for road and safety hazards such as:

- Radical changes in traffic, road, or weather conditions.

- Conflicts in the established traffic plan.

- Deterioration of the road network (potholes, oil slicks, etc.).

- Malfunctioning traffic control devices.

## Equipment

### Distinctive Markings

MP vehicles used for traffic operations should bear distinctive markings to be readily recognizable and to increase the effect of their presence on potential traffic law violators.

Placards bearing the words “Military Police” (bold black letters on a white background) should be placed on the front, rear and sides of each vehicle when possible.

## Emergency Signal Devices

Patrol vehicles should be equipped with sirens, PA system, warning lights and the appropriate special equipment.

### Sirens (Audible Warning Devices)

These may be mechanical or electronic.

PM policy should specify, after appropriate legal research of jurisdictional statutes, whether or not the high-low and/or yelp sounds conform to the jurisdiction’s statutes requiring other traffic to yield the right-of-way to emergency vehicles sounding the warning.

### Public Address (PA) System

A PA system should be part of the electronic siren set up. Appropriate verbal commands through the vehicle’s loudspeaker are additional audible warnings which other traffic units are required to obey.

The ordinary vehicle horn used with warning lights is a recommended practice. The horn produces a less startling sound and avoids disturbing other vehicle operators who are not the object of MP traffic enforcement.

### Warning Lights

The lights can be red, blue, or red and blue, and must conform to local statutory requirements. Current law enforcement preference is for blue lights, or blue with a white light.

Warning lights can be steady, flashing, alternately flashing on each side of the vehicle, or a combination of steady and flashing.

The flashing of lights can be accomplished by interrupting the electric current (flasher unit); by a reflector that circles the light source; by several light sources with individual reflectors, all of which revolve; or by gaseous discharge lamps (strobos).

Ordinarily, the higher the lights, the better their visibility. Warning lights mounted below the roof line are more likely to be obscured by intervening traffic units (as opposed to those positioned along the left and right sides of the emergency vehicle).

Warning lights shining to the rear indicate a roadway hazard to motorists approaching the MP vehicle when it is halted on or near the roadway. Especially effective for high-speed roadways and rolling terrain are devices that can be raised well above the roof level and contain flashing warning lights and/or lights patterned to direct traffic to move left or right, away from an accident scene or obstruction.

## Other Equipment

Patrol vehicles may also carry the following special equipment:

**Safety Equipment**— portable lights, flares, traffic cones, fire extinguisher (dry chemical).

**First Aid**— first aid kit, blankets.

**Tools**— shovels, ax, crowbar, jacks, rope, wrenches.

**Service/Admin**— area maps, report forms, directions, clipboard.

**Accident Investigation Kit**— measuring devices, chalk, evidence containers, rope or chain.

**Spotlight**— portable or roof-mounted (remotely controlled from inside the vehicle).

## Escorts

Military Police may be called on to provide motor escorts for convoys, physical security reasons, VIP security, etc. The purpose of such escorts is to enforce traffic regulations and insure safe, law abiding movement. There are several methods of conducting motor escorts. The method used will depend on geography, resources and the propose of the escort.

Convoy commanders are responsible for general organization and procedures used within their

convoys. Military Police are there to assist by accomplishing the following:

**Leading**— The MP patrol vehicle leads the vehicle(s)—often emergency vehicles—and provides escort through intersections and congested areas.

**Leading And Following**— A minimum of two patrol vehicles are used—one leading and one following—the escorted vehicles. The MP in the front vehicle dismounts at intersections/TCPs. They then remount and resume their lead position. The following patrol vehicle(s) keep the convoy closed up, render assistance, and provide security. Traffic congestion or the number of vehicles being assisted, may prevent the lead MP vehicle from regaining the lead. This situation will require the first escorted vehicle to lead the convoy temporarily.

**Empty Truck**— A truck with Military Police precedes the convoy and posts MPs at designated locations to establish TCPs. An empty truck follows the convoy and picks up the MPs. Personnel should be numbered to avoid missing someone.

**Leapfrog**— Additional Military Police in a patrol vehicle precede the convoy and post personnel at designated locations. When the convoy passes, the MPs remount and pass the convoy. The procedure is repeated as necessary. This method is particularly limited on narrow, congested, or mountainous roads. A modified leapfrog method uses more than one patrol to perform the mission. This method is very useful when TCP locations are close together.

**Perimeter**— This method employs patrol escorts on all four sides of the escorted vehicles. The security provided can

be expanded with additional perimeter rings.

## **Route Influence**

A route selected for a convoy may pass through built-up areas, flat and open country, or probably a

combination of both. As the area changes, the escort method is also changed. Prior to a movement off the installation, coordination is made with local law enforcement agencies who can assist the Military Police escort through congested and built-up areas, onto high-speed roadways. This assistance will reduce the need for TCPs at major intersections. However, unit guides and temporary direction signs are required to prevent loss of stragglers.



## Traffic Law Enforcement

### Principles and Policies

A traffic violation or offense is broadly defined as the **commission or omission of any act prohibited or required by rules, regulations or laws governing the conduct of traffic**. The purpose of traffic law enforcement is to make the roads safe for all traffic and to encourage voluntary compliance with traffic laws by all motorists.

Well-defined policies concerning enforcement of traffic laws must be established by the installation commander. Since the Military Police will often be required to make on-the-spot decisions, they should keep in mind these policies and principles:

- ▶ Take uniform action for the same violations under similar conditions.

MPs should be able to detect and identify unusual or illegal behavior, or conditions which produce or accompany such behavior.

MPs should be able to evaluate the legality or illegality of such behavior and interpret its effect on applicable laws.

MPs should be able to apply allowable tolerances and know if they have sufficient evidence to support the formal citation of an offense.

MPs should be able to apprehend violators under adverse conditions.

- ▶ Take immediate action once a violation is observed. This must be done with the safety of the public and the MPs in mind.

► Selective enforcement is the distribution of MP traffic control assets where they are most needed and will be most effective. It is based on the prediction and prevention of future violations and accidents from past experience. Patrols are assigned duties in proportion to violation and traffic accident distribution by time and place. Efforts are directed to reducing violations and accidents by the presence and activity of MP patrols.

► When establishing guidance policies for MPs, **tolerances** are often implemented. This leeway allows for mechanical and human error.

For example, if the speed limit is 30 mph (48 km/h) policy might be that speeding violations will be cited only when speeders exceed 35 mph (56 km/h). Tolerances strengthen any enforcement program since it prohibits the excuse that a mistake has been made.

**CAUTION: Do not allow tolerances to be arbitrarily increased.**

► The **community should be informed** when certain driving actions are causing accidents or traffic problems. The community should also be informed that stringent enforcement efforts are in effect. This will enhance the enforcement effort.

## Speed Measuring Devices

While speeding does not cause all accidents, it does have a definite effect on the severity of accidents. For this reason, efforts to control speeding are often of prime concern. Speed measuring devices are used to **control speed, increase compliance with traffic laws, and to conduct speed studies.**

When planning for use of speed measuring devices, the following considerations must be evaluated to determine the device or method most suited for any given situation:

- Cost.
- Local recognition by judicial authorities.
- Training required for persons to use devices.
- Maintenance requirements.
- Mission and environment of unit employing the devices.

## Pace Method

In this method, the MP driver positions his vehicle behind the suspect vehicle and matches the driving speed. A constant interval should be maintained between the two vehicles for a minimum distance of 3/10th mile (.48 km). The MP should note the speed when this process first begins, and again when the distance is completed.

To employ this method the MP vehicle must be calibrated to insure that its speedometer gives a true indication of speed. Only the driver should note the speed since he is looking directly at the speedometer. The MP rider will get a false reading due to his angle of sight.

The driver should read the speedometer after his catch up speed has stabilized and is the same as the suspect vehicle. The matching speed must be maintained, and the driver should call out the speedometer readings to the partner during the pace.

Speedometers should be **calibrated at least quarterly**. A chart must be maintained in each patrol vehicle listing any speedometer deviation from true speeds up to the top speed at which excessive speed arrests can be expected. Speedometer more than 2 or 3 mph (4 or 5 km/h) off should be repaired.

## Time/Distance/Speed Computations

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

Once distance has been accurately measured, precise timing of the period necessary for a vehicle to travel such distances permits computation of the vehicle's speed.

## Stopwatches

A stopwatch can be used to determine the speed of vehicle traveling a measured distance (normally 1/6 of a mile, 880 feet or 265 meters). Tables which relate miles per hour to the elapsed time necessary for a vehicle to have passed through the distance being used, enable an MP to determine the speed of any vehicle he times.

## Aircraft Enforcement

Speed enforcement by this method is used by air and ground teams. The MP in the aircraft determines vehicle speed and relates the identity, speed, location and direction of travel to the ground unit which effects the enforcement contact.

Painted marks on the roadway at precisely measured intervals (from 1/8 mile to one mile) are used by the MP in the aircraft to mark the beginning of the speed measuring course.

Airplane silhouettes may be used as the painted marks to increase the sense of presence of traffic enforcement personnel.

## Automatic Stationary Speed Computer And Recording Instrument (ASCRI)

This type device is placed adjacent to a road or highway and consists of four main parts:

**Sensing devices** in the roadway which detect passing vehicles between two precisely measured points.

**A computer** which automatically produces a speed figure from the information received from the sensing devices.

**A light source** which provides light sufficient for photographing the vehicle and its operator without interfering with the driver's vision.

**A camera** which photographs simultaneously on one frame the vehicle and driver, the speed figure produced by the computer, the time, date, location and any other information essential for prosecution and previously set as a display within the instrument.

The ASCRI is set to record only those violators exceeding the speed limit by a sufficient margin to require enforcement action. If driving too slowly is a problem, the instrument can be set to record this type of violation also.

Personnel are required to replenish the film supply; develop the film; and process notifications to owners of the involved vehicles of the enforce-

ment action contemplated. An accurate installation vehicle registration system and coordination with the state, or other applicable vehicle registration agencies is necessary for efficient processing of violations.

Installation of the ASCRI is recommended primarily at the beginning of reduced speed zones, such as entrances to an installation, troop area, school zones, etc.

## RADAR

RADAR (radio detection and ranging) speed measuring devices operate by measuring the difference between high frequency radio signals sent from the instrument and the signals reflected back to the instrument by the object vehicle. The instrument automatically reads out the difference in miles per hour (km/h). A desirable characteristic is automatic or self-calibrating.

The three basic types of RADAR devices used by MPs are stationary, moving/pacing, and hand-held.

### Stationary RADAR

**This type device is normally operated from a patrol vehicle parked along a roadway for stationary observation and enforcement. An additional patrol vehicle is stationed to intercept vehicles identified as speeding by the RADAR-equipped patrol.**

**Desirable model characteristics for stationary RADAR include digital readout with speed lock-in capability, audible alarm and range selector. The antenna should have an all-weather housing and brackets for window mounting.**

### Moving RADAR

**This type device installed in a patrol vehicle (normally connected to the cigarette lighter receptacle) allows the patrol to selectively monitor speeds of approaching devices up to approximately 2,500 feet away while the patrol vehicle is moving.**

**The mobility of moving RADAR-equipped patrol vehicles allows high visibility of MP patrols, which is an important deterrent to speeders.**



**RADAR models selected for use should have the following characteristics:**

**Audible alarm**— triggers when a speeder is detected, thus eliminating the need to constantly watch the readout unit.

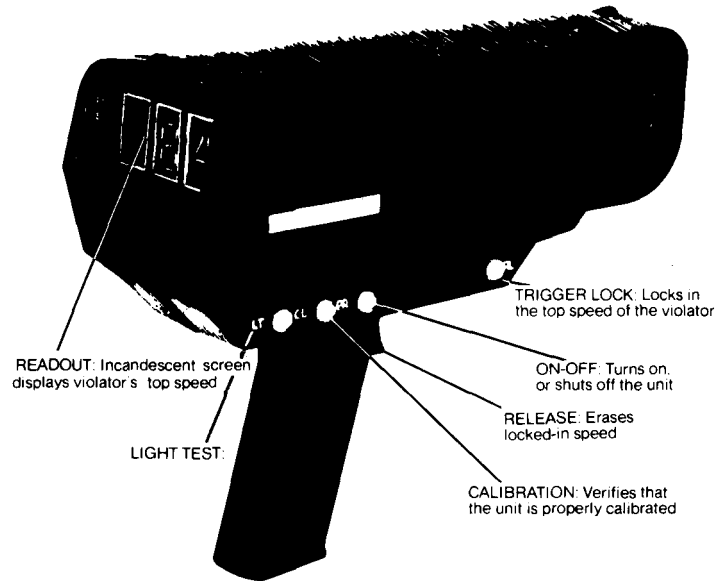
**Easy-to-read digital display**—also locks the violator's speed for reference by the MP and the violator after the enforcement contact has been made.

**Portable operation**— with addition of a battery pack.

**Solid State Circuitry**

**Capable of stationary mode operation**— when patrol vehicle is conducting stationary enforcement.

**Range selection capability**— to extend or reduce operational range, depending on terrain or structured influences.

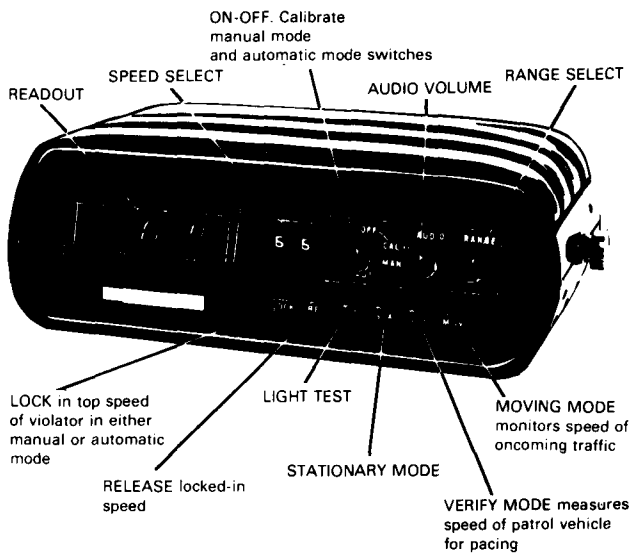


*Hand-Held RADAR*

Commonly known as speedguns, a hand-held radar, after being turned on, continuously emits a microwave signal which bounces off the vehicle and is absorbed by the shield in front of the speedgun. This is instantly translated into a digital readout on the screen of the speedgun and can be locked in by pulling the trigger. This allows the reading to be held on the screen until the release button is pushed.

**Desirable model characteristics of speed-guns include:**

- Easy-to-read digital display.
- Solid-state circuitry.
- Telescopically coiled, retractable power cord.
- Can be vehicle mounted.



*Moving RADAR With Desirable*

**Hand-held RADAR**

These small, lightweight devices have a completely enclosed component antenna and are powered by either a cigarette lighter receptacle or a portable battery pack.

Hand-held RADARS used by MPs on motorcycles can be easily stored in attached saddlebags or accompanying cart.

## Considerations

**Operator Training**— Operators require minimum training in site selection, positioning and handling of antenna, use of internal calibration system or tuning fork, judging effects of terrain and structural influences, and severe weather conditions such as heavy rain.

**Maintenance**— A scheduled maintenance program in accordance with manufacturer specifications must be established and records maintained of services performed by qualified technicians.

**Tuning Forks**— The tuning fork is a calibrated instrument certified by the manufacturer. It should never be struck against a hard object. **Preferably, strike the heel or sole of your shoe.**

**Civil Laws**— Supervisors must insure compliance with applicable civil laws. Since radar operation can interfere with other communications, some jurisdictions require prior approval for its use.

## Drunk Driving

The operation, while drunk, of any motor vehicle is **punishable under Article 111, Uniform Code of Military Justice**. Law enforcement personnel normally detect this violation by observation of unusual, abnormal or illegal driver behavior. Some examples of these types of behavior are:

Driving with extreme caution, especially slow speed on through streets and highways; stopping where no stop is required; long stops at stop signs; and apparent confusion at intersections.

Lane straddling, speeding, or failure to signal a turn.

Erratic movement, such as weaving; driving in the wrong lane; driving on the road shoulder and moving over the center line, especially on curves.

Swerving farther than necessary when passing or taking a long time to return to the proper lane after passing.

Failure to dim bright lights and/or repeated difficulty in engaging gears of a vehicle.

## Investigative Procedures

When a traffic accident or violation occurs and law enforcement personnel observe unusual, abnormal or illegal driver behavior indicating driving ability might be impaired due to alcohol or drug use, observation and behavior tests should be made and recorded on DD Form 1920 (Alcoholic Influence Report). Driver actions such as reaching for license or getting out of the car can be very valuable evidence.

MPs should also obtain as much information as possible concerning the incident during the investigative phase.

### Areas to be investigated:

When, where and with whom did the suspect drink?

How much and what type of liquor was consumed?

What conditions were involved in the accident, and/or how did the suspect operate the vehicle?

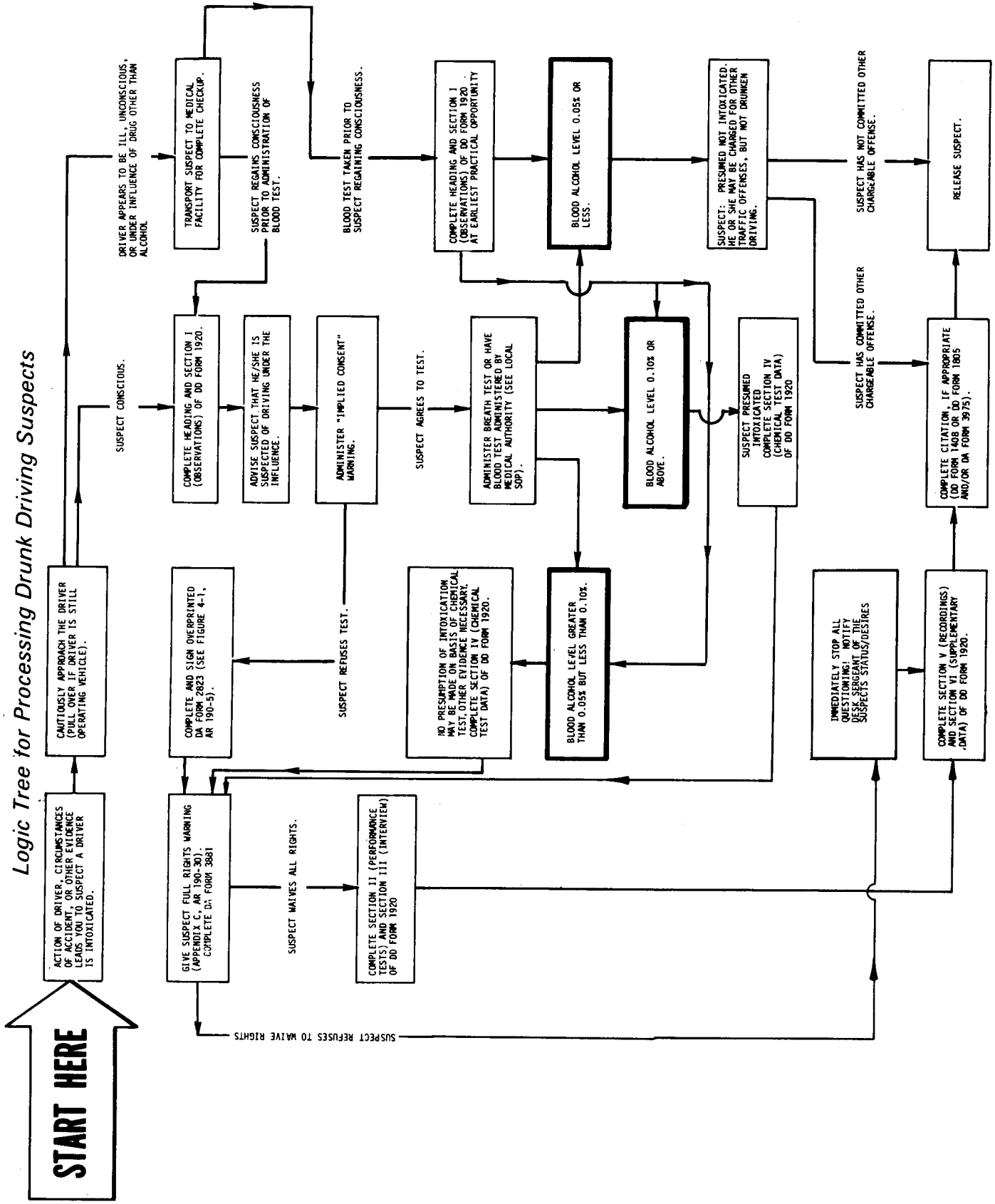
Are there physical or emotional conditions which might explain the suspect's unusual behavior or apparent intoxication?

Is there paraphernalia, associated with intoxicants, on the suspect's person or vehicle?

Frequently a suspect will exhibit one or more signs of alcohol or drug influence such as odor of liquor, slurred speech, profanity, sloppy appearance, unsteadiness or irrational behavior. It should be noted that any of these **signs may also be caused by chronic or acute illness or physiological conditions** such as diabetes, amnesia, shock, nervousness, speech disorders, muscular dystrophy, etc. If illness is suspected, medical authorities should be contacted immediately.

After you decide that a driver is under the influence of intoxicant or drugs, never allow the person to operate his vehicle. You must **secure his personal property and vehicle**. Before driving or towing a privately owned vehicle, you must obtain the consent of the driver/owner. There should be an impound location near the MP station to park such vehicles.

Logic Tree for Processing Drunk Driving Suspects



If the driver/owner refuses to let you or another person drive the vehicle, secure it at the scene by locking the doors and removing the keys.

## DD Form 1920

DD Form 1920 is used to record observations and behavior tests conducted on persons suspected of driving under the influence of alcohol/drugs. The form consists of a heading and six sections. The order in which these sections are filled out is based on local policy which will also include when to offer chemical testing of blood alcohol levels.

Blood alcohol concentration standards are established for administrative and enforcement purposes in AR 190-5. The following standards maybe modified depending on the policies of the state or country:

0.0% to 0.05%—not intoxicated

0.05% to less than 0.10%—not necessarily intoxicated; other evidence necessary.

0.10% or greater-intoxicated

## Completion Steps for 1920

### Heading

Entries are self-explanatory in this part of DD Form 1920. Make no entry in blocks if the information is unknown.

### Section I—Observations

Identify individual in the “Made By” and “Witnessed By” blocks. Include units and installation for each. Enter short descriptions as appropriate. In the “Clothes” block, mark out the inappropriate words. In each category, more than one block may be checked if applicable.

### Section II—Performance Tests

Prior to conducting the tests in this section, a military suspect must be advised of his rights. The suspect may refuse to perform these tests; if so, enter “Refused Test.” The suspect may also refuse to finish a test once started; if so, enter “Refused to Continue Tests.” If a suspect refuses to be tested, move to Section IV (skip Section III).

Conduct the tests as follows:

**Balance**— Ask the suspect to stand upright,

arms outstretched, on one foot. Repeat the process on the other foot. Observe his actions. Next have the suspect stand upright, feet together, eyes closed with his head tilted backwards. Observe and record his actions on the form.

**Walking and Turning**— Have the suspect walk about 15 feet (4 to 5 meters) by placing heel to toe. Next sharply request the suspect to “turn around, please, and walk back in the other direction.” Observe and record his actions.

**Finger To Nose**— Have the suspect stand erect with eyes closed and arms extended horizontally. Instruct the suspect to touch his nose, first with his right, and next with his left index finger. Observe and record his actions.

**Coins**— Place three or four coins on the floor and ask the suspect to pick them up. Observe and record his actions.

### Section III—Interview

Prior to completing this section, every suspect (civilian and military) must be warned of his rights again. If the suspect refuses to answer, this section is not used. If the suspect does answer but the question does not apply, enter “NA.” Read the suspect his rights again, prior to taking the handwriting sample of signature.

### Section IV—Chemical Test Data

Under the implied consent policy outlined in AR 190-5, any person who operates a motor vehicle on a military installation is deemed to have given consent to a chemical test or tests of his blood, breath or urine for the purpose of determining the alcoholic content of that person’s blood.

When such tests are used, the MP will warn the suspect that under the implied consent policy, failure to submit or to complete a chemical test will result in a 6-month revocation of installation driving privileges. Suspects will be advised that they **do not have the right to have a lawyer present prior to taking these tests.**

If the suspect refuses to be tested or fails to complete a test, the MP will complete a **sworn statement** stating why the MP had reasonable cause to believe the suspect was driving a vehicle while under the influence, and that the suspect

ALCOHOLIC INFLUENCE REPORT					
INSTALLATION <i>Jt. Blank, Ga</i>			VIOLATION REPORT NO. <i>A509022</i>		ACCIDENT REPORT NO. <i>N/A</i>
DATE, TIME AND LOCATION OF ACCIDENT OR INCIDENT <i>13 Feb 75, 2330 Hrs., Jackson Rd at 39<sup>th</sup> St.</i>			DATE AND TIME IN CUSTODY <i>13 Feb 75, 2330 Hrs.</i>		APPREHENDING OFFICER <i>Jones</i>
NAME OF SUBJECT <i>Smith, Harry L.</i>			GRADE/CATEGORY <i>SP4</i>		SSN <i>276-78-2461</i>
UNIT OF ASSIGNMENT/ADDRESS <i>Co. B, 360<sup>th</sup> Inf. Jt. Blank, Ga 30905</i>			<input checked="" type="checkbox"/> DRIVER <input type="checkbox"/> PASSENGER <input type="checkbox"/> PEDESTRIAN		
AGE <i>21</i>	SEX <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female	APPROX WEIGHT <i>175</i>	OPERATOR'S LICENSE NO. <i>5525-767-53-030-306</i>		STATE <i>GA</i>
Check all applicable boxes describing conditions observed, i.e., more than one box may be checked to describe conditions observed.					
SECTION I - OBSERVATIONS					
MADE BY (Name, grade, SSN & organization) <i>Alice J. Jones, SP4, 769-27-6231</i>			WITNESSED BY (Name, grade, SSN & organization) <i>James R. Brauser, P3C, 236-72-3647</i>		
<i>559<sup>th</sup> MP Co. Jt. Blank, Ga 30905</i>			<i>559<sup>th</sup> MP Co. Jt. Blank, Ga, 30905</i>		
CLOTHES <small>(Describe type &amp; color)</small>	HAT OR CAP <i>None</i>				
	JACKET OR COAT <i>Green, Fur collar</i>				
	SHIRT <del>OR SWEATER</del> <i>Blue Plaid</i>				
	PANTS <del>OR SKIRT</del> <i>Brown</i>				
	CONDITION <input type="checkbox"/> Disorderly <input type="checkbox"/> Disarranged <input type="checkbox"/> Soiled <input type="checkbox"/> Mussed <input checked="" type="checkbox"/> Orderly		DESCRIBE <i>neatly dressed</i>		
BREATH	ODOR OF ALCOHOLIC BEVERAGE <input type="checkbox"/> Strong <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Faint <input type="checkbox"/> None				
ATTITUDE	<input type="checkbox"/> Excited <input type="checkbox"/> Hilarious <input type="checkbox"/> Talkative <input type="checkbox"/> Carefree <input type="checkbox"/> Sleepy <input type="checkbox"/> Profanity <input type="checkbox"/> Combative <input type="checkbox"/> Indifferent <input type="checkbox"/> Insulting <input type="checkbox"/> Cocky <input checked="" type="checkbox"/> Cooperative <input type="checkbox"/> Polite				
UNUSUAL ACTIONS	<input type="checkbox"/> Hiccoughing <input type="checkbox"/> Belching <input type="checkbox"/> Vomiting <input type="checkbox"/> Fighting <input type="checkbox"/> Crying <input type="checkbox"/> Laughing				
SPEECH	<input type="checkbox"/> Not understandable <input type="checkbox"/> Mumbled <input type="checkbox"/> Slurred <input type="checkbox"/> Mush mouthed <input type="checkbox"/> Confused <input type="checkbox"/> Thick tongued <input type="checkbox"/> Stuttered <input type="checkbox"/> Accent <input checked="" type="checkbox"/> Fair <input type="checkbox"/> Good				
SPONTANEOUS ACTS (Statements, walking, turning, etc) <i>Had trouble finding license</i>					
INDICATE BRIEFLY WHAT FIRST LED YOU TO SUSPECT ALCOHOLIC INFLUENCE <i>Driving too slowly (10 MPH in a 45 MPH zone)</i>			SIGNS OR COMPLAINT OF ILLNESS OR INJURY <i>None</i>		
SECTION II - PERFORMANCE TESTS <small>(Warning of rights in accordance with separate departmental policy is required for military personnel)</small>					
ADMINISTERED BY (Name, grade, SSN & organization) <i>Jones</i>				DATE & TIME TESTS PERFORMED <i>14 Feb 75, 0010 Hrs.</i>	
BALANCE	<input type="checkbox"/> Falling <input type="checkbox"/> Needed support <input type="checkbox"/> Wobbling <input checked="" type="checkbox"/> Swaying <input type="checkbox"/> Unsure <input type="checkbox"/> Sure				
WALKING	<input type="checkbox"/> Falling <input type="checkbox"/> Staggering <input checked="" type="checkbox"/> Stumbling <input type="checkbox"/> Swaying <input type="checkbox"/> Unsure <input type="checkbox"/> Sure				
TURNING	<input type="checkbox"/> Falling <input type="checkbox"/> Staggering <input checked="" type="checkbox"/> Hesitant <input type="checkbox"/> Swaying <input type="checkbox"/> Unsure <input type="checkbox"/> Sure				
FINGER TO NOSE	RIGHT <input type="checkbox"/> Completely missed <input checked="" type="checkbox"/> Hesitant <input type="checkbox"/> Sure		LEFT <input checked="" type="checkbox"/> Completely missed <input type="checkbox"/> Hesitant <input type="checkbox"/> Sure		
COINS	<input type="checkbox"/> Unable <input checked="" type="checkbox"/> Fumbling <input type="checkbox"/> Slow <input type="checkbox"/> Sure <input type="checkbox"/> Other		BALANCE DURING COIN TEST <i>Had to rest knee on floor</i>		
ABILITY TO UNDERSTAND INSTRUCTIONS <input type="checkbox"/> Poor <input checked="" type="checkbox"/> Fair <input type="checkbox"/> Good			EFFECTS OF ALCOHOL <input type="checkbox"/> Extreme <input checked="" type="checkbox"/> Obvious <input type="checkbox"/> Slight <input type="checkbox"/> None   ABILITY TO DRIVE <input checked="" type="checkbox"/> Unfit <input type="checkbox"/> Fit		
REMARKS					

DD FORM 1920  
1 AUG 73

SECTION III - INTERVIEW <small>(Warning of rights in accordance with separate departmental policy is required for all personnel)</small>				
Were you operating a vehicle? <u>Yes</u> Where were you going? <u>Home</u>				
What street or highway were you on? <u>Don't know name</u> Direction of travel? <u>"Toward Home"</u>				
Where did you start from? <u>EM/EM Club</u> What time did you start? <u>Don't know</u> What time is it now? <u>Midnight</u>				
What city (county) are you in now? <u>St. Blenck</u> What is the date? <u>13 Feb</u> What day of the week is it? <u>Thursday</u>				
INTERVIEWER TO FILL IN ACTUAL	TIME	DAY	DATE	INTERVIEWER'S NAME
	<u>0025</u>	<u>Friday</u>	<u>14 Feb 75</u>	<u>Jones</u>
When did you last eat? <u>4 hrs ago</u> What did you eat? <u>Hamburger, French fries</u>				
What were you doing during the last three hours? <u>Talking with friends</u>				
Have you been drinking? <u>some</u> What? <u>Beer</u> How much? <u>a few</u> Where? <u>EM/EM Club</u>				
Time started? <u>1830 hrs</u> Time stopped? <u>Don't know</u> Are you under the influence of an alcoholic beverage now? <u>NO</u>				
What is your occupation? <u>Soldier</u> When did you last work? <u>Today</u>				
Do you have any physical defects? <u>NO</u> If so, what's wrong? <u>N/A</u>				
Do you limp? <u>NO</u> Have you been injured lately? <u>NO</u> If so, what's wrong? <u>N/A</u>				
Are you ill? <u>NO</u> <sup>just tired</sup> If so, what's wrong?				
Did you get a bump on the head? <u>NO</u> Were you involved in an accident today? <u>NO</u> Have you had any alcoholic beverage since the accident? <u>N/A</u>				
If so, what? <u>N/A</u> Where? <u>N/A</u> How much? <u>N/A</u> When? <u>N/A</u>				
Have you seen a doctor or dentist lately? <u>NO</u> If so, who? <u>N/A</u> When? <u>N/A</u>				
What for? <u>N/A</u> Are you taking tranquilizers, pills or medicines of any kind? <u>no</u>				
If so, what kind? (Get sample) <u>N/A</u> Last dose? <u>N/A</u> Do you have epilepsy? <u>NO</u> Diabetes? <u>no</u>				
Do you take insulin? <u>NO</u> If so, last dose? <u>N/A</u> Have you had any injections of any other drugs recently? <u>NO</u>				
If so, what for? <u>N/A</u> What kind of drug? <u>N/A</u> Last dose? <u>N/A</u>				
When did you last sleep? <u>Last night</u> How much sleep did you have? <u>7 hrs</u> Are you wearing false teeth? <u>NO</u> Glass eye? <u>NO</u>				
HANDWRITING SPECIMEN <small>(Signature and/or anything he chooses)</small>		<u>Harry Q. Smithy, SP 4</u>		
SECTION IV - CHEMICAL TEST DATA				
TYPE OF SPECIMEN		TIME, DATE AND LOCATION OF TEST		
<input checked="" type="checkbox"/> Blood <input type="checkbox"/> Breath <input type="checkbox"/> Saliva <input type="checkbox"/> Urine <input type="checkbox"/> Other		<u>0045 hrs, 14 Feb 75, Blank Army Hosp.</u>		
ADMINISTERED BY <small>(Name, grade, SSN &amp; organization)</small>		762-03-4732	TEST RESULT	
<u>William X. Brown, Maj, Md. Blank Army Hospital</u>		<u>See Attached Report</u>		
IF TEST REFUSED, OR UNABLE TO BE ADMINISTERED, STATE REASON				
SECTION V - VIDEO TAPE, MOTION PICTURE, VOICE RECORDINGS				
TYPE COVERAGE		SCOPE OF COVERAGE		
<input type="checkbox"/> Video tape <input type="checkbox"/> Motion picture <input checked="" type="checkbox"/> <u>Photo</u> <input checked="" type="checkbox"/> Voice		<input type="checkbox"/> Observation <input type="checkbox"/> Performance test <input checked="" type="checkbox"/> Interview		
TAKEN BY <small>(Name, grade, SSN &amp; organization)</small>			REFERENCE CODE	
<u>Brouser</u>				
SECTION VI - SUPPLEMENTARY DATA				
WITNESSES	NAME	ADDRESS	TELEPHONE NO.	CONDITION
PASSENGERS IN SUSPECT'S VEHICLE				

refused or failed to complete a chemical test. This is then forwarded to the installation commander or his designee for action. Charges of driving under the influence may still be brought against the suspect based on other evidence.

Chemical tests of blood, urine or other body fluids will be conducted by qualified medical personnel or by designated authorities of the state. Samples of blood and urine forwarded for chemical analysis will have a **chain of custody** established.

Chemical breath tests are conducted by qualified personnel as outlined in AR 190-5. The type test used must be approved for use by the state in which the installation is located. The test must also be conducted in the way the state approves. In the absence of specific state guidance, the following procedures will apply:

Observe the suspect for 20 minutes, during which he should not ingest alcohol, other fluids, foods or smoke.

Verify calibration of the test instrument by using a control sample immediately prior to the test.

Follow operating procedures in the manufacturer's instruction manual.

### Section V—Recording

Complete this section if videotape, motion pictures or voice recordings are conducted. It is not necessary to warn the suspect of his rights if this is conducted in a manner in which the suspect can normally understand, given normal perception. It must not be done secretly.

If any questions are to be asked or answered, the suspect must receive a rights warning.

### Section VI—Supplementary Data

This section is for information concerning **other witnesses, vehicle occupants, etc.** It does not include descriptions of law enforcement personnel.

In the "condition" block, enter a phrase which best describes the individual ("sober," "intoxicated," or "unknown.")

## Miscellaneous Violations

In handling other types of traffic violations, you must exercise a high degree of judgment. These types of violations include:

- Stop Sign Violation
- Maintaining Improper Distance
- Time Limit Parking
- Improper Lane Usage
- Improper Parking
- Improper Turns
- Jaywalking
- Oversize or Overweight Vehicles
- Improper Backing
- Obstructing Driver's View
- Bicycle Violations
- Driving Too Slow (so as to interfere with the safe flow of traffic)

When making judgment decisions, Military Police should always favor or give the benefit of the doubt to motorists.

Whether a creeping stop, rolling through a stop sign, or weaving between lanes is dangerous or hazardous, must be determined by the MP, based on the situation and guidance received from the provost marshal.

A method of checking parking violations is to chalk the tire and pavement in time limit zones, and then recheck after the given time. A leeway of 15 to 30 minutes should be allowed.



## Handling Violators

### Identification

When you see someone break a traffic law, base your actions on the following criteria:

If it is a **privately owned vehicle** write down:

- License number, make, model and color of the vehicle.
- Installation decal number.
- Number of people in the vehicle and their sex.

- Any other marks on the vehicle that would help identify it.

If it is a **military or GSA (government) vehicle**, write down:

- Type of vehicle (¼-ton utility truck, 2½-ton truck, etc).
- Bumper markings and USA number.
- Number of persons in the vehicle and their sex.
- Any other marks on the vehicle that would help identify it.

Check to see if the vehicle is on the stolen vehicle list; if so, plan your stop and approach of the vehicle.



## Pursuit and Stop

**Remember: your safety and that of the public are the most important things to think about when pursuing or stopping a violator.**

Radio the desk to let the station know you are in pursuit. Give your location and all information you have to identify the vehicle you are pursuing. This will help other patrols find the vehicle if you lose it in traffic.

Use your emergency lights, public address system, or horn to signal the violator to pull over and stop.

**Note: Use your siren only if you cannot stop the violator any other way. The siren may startle and confuse the driver and cause him and other drivers in the vicinity to react suddenly in a way dangerous to you and other traffic.**

Direct the driver to the right edge of the road. Choose a place large enough so both your car and the violator's can pull all the way off the road and not interfere with other traffic.

Park your car 10 to 12 feet (3 to 4 meters) to the rear of the violator's vehicle and 3 feet (1 meter) to the left. Pull in, don't back in. (In this position your vehicle protects you from oncoming traffic. You also have room to move out of the way if the violator should suddenly try to ram your vehicle.)

Leave your warning lights on.

Radio the desk and give your location.

## Approach

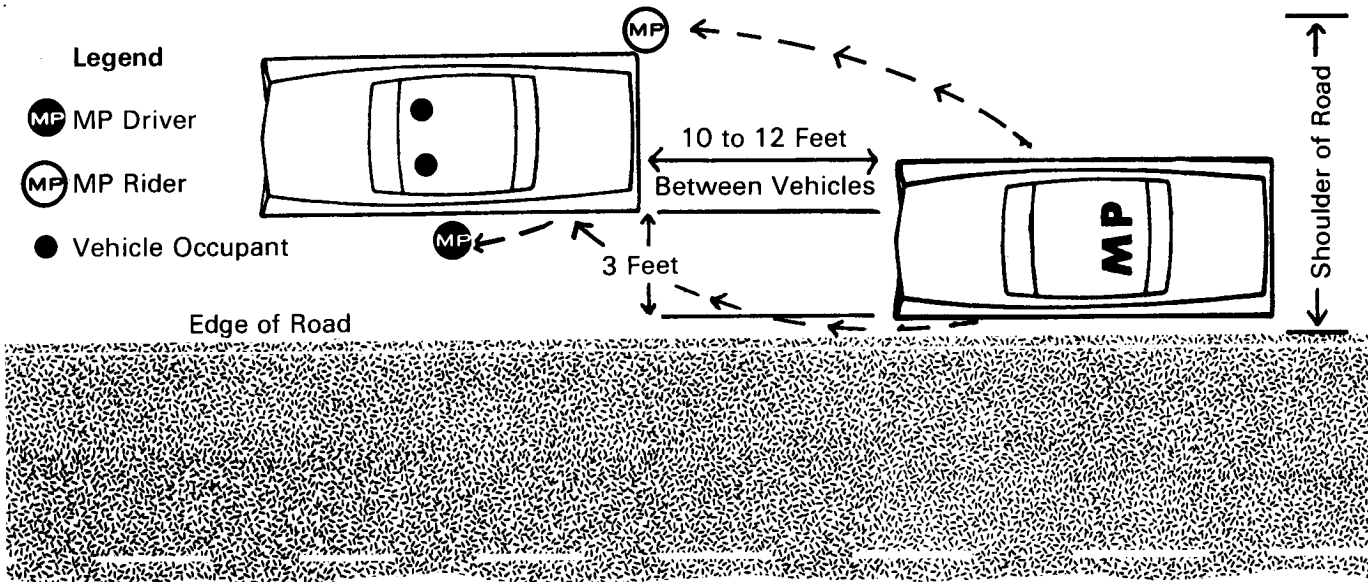
The following illustration and text show in detail how you should position your vehicle and how to approach the violator's vehicle.

### People in Front Seats

The MP driver should follow these steps in approaching a vehicle with occupants only in the front seat:

- ✓ Keep violator in sight at all times.
- ✓ Approach from left side.
- ✓ Stop at rear window-check trunk.
- ✓ Check rear seat and floor.

**Note: If no partner, driver must be particularly sure that his check is thorough.**



*Approaching Vehicle With Occupants in Front Seat*

**The MP rider proceeds as follows:**

- ✗ Approach from right side.
- ✗ Stop at right rear of vehicle.
- ✗ Watch people in the vehicle.
- ✗ Be ready to assist driver.

**People in Front and Rear Seats**

When the vehicle has occupants in front and rear seats, the MP driver proceeds as follows:

- ✓ Keep violator in sight at all times.
- ✓ Approach from left side—check trunk.
- ✓ Stop at rear window.
- ✓ Check rear seat and floor.

**Note: If no partner, driver must be particularly sure that his check is thorough.**

- ✓ Go to front edge of driver's door.
- ✓ Check front seat and floor.
- ✓ Go to a point near the center of the vehicle, just behind the rear edge of driver's door.
- ✓ Watch the people in both front and back.

The MP rider's responsibilities remain the same:

- ✗ Approach from the right side.
- ✗ Stop at right rear of vehicle.
- ✗ Watch people in vehicle.
- ✗ Be ready to assist driver.

**Violator Exit From Vehicle**

When it is necessary to have the violator get out of his vehicle, follow these steps:

- Check for oncoming traffic.
- Open the driver's door and move backwards carefully with the door.

**Note: When traffic makes it unsafe for the violator to get out of the driver's side of the vehicle, open the passenger's door.**

- Tell the driver to move around to the rear of his vehicle. Stay behind him, following him to the curb or sidewalk to the right of the vehicle.

**Dangerous Felon**

Any time you observe, pursue, stop or approach a dangerous felon, you must apply these guidelines to insure your safety, that of the public and successful completion of your duty.

**Notification**

Notify the desk sergeant at once and give the following information:

Your patrol identification.

Exact location of contact with the vehicle.

Description of the vehicle and its occupant(s)—

- License number, make, model and color of vehicle.

- Number of people in vehicle and sex.

- Any marks which will help identify the vehicle.

Direction of travel and the last intersection passed.

**Note: Repeat direction information often so other patrols can converge for support. The suspect vehicle should be followed until it is known that help is available.**

**Pursuit and Stop****Select a Good Stopping Site**

Look for a **level area large enough to hold 3 to 4 cars** and as open as possible. A well-lighted area is best at night.

**Do not stop near alleys, buildings, vacant lots, etc.** These areas make it easier for the suspect to escape.

Use **warning lights and siren.**

**Remember: Your safety and that of the public are the most important**

**things to think about when pursuing or stopping a dangerous felon.**

Pull alongside the suspect vehicle's rear door and signal him to pull over. Use hand signal or voice (public address system).

Stop your vehicle 10 to 12 feet (3 to 4 meters) to the rear of the suspect vehicle and 3 feet (1 meter) to the left. (Pull in, don't back in.) In this position your vehicle protects you from oncoming traffic and gives you room to move out of the way if the suspect tries to ram your car. Angle the front of your vehicle toward the street.

At night, aim a spotlight at the vehicle interior and follow these guides:

**MP driver-** Take a position behind the left front fender of your vehicle.

**MP rider-** Exit from left front door and take a position at the left rear of your vehicle.

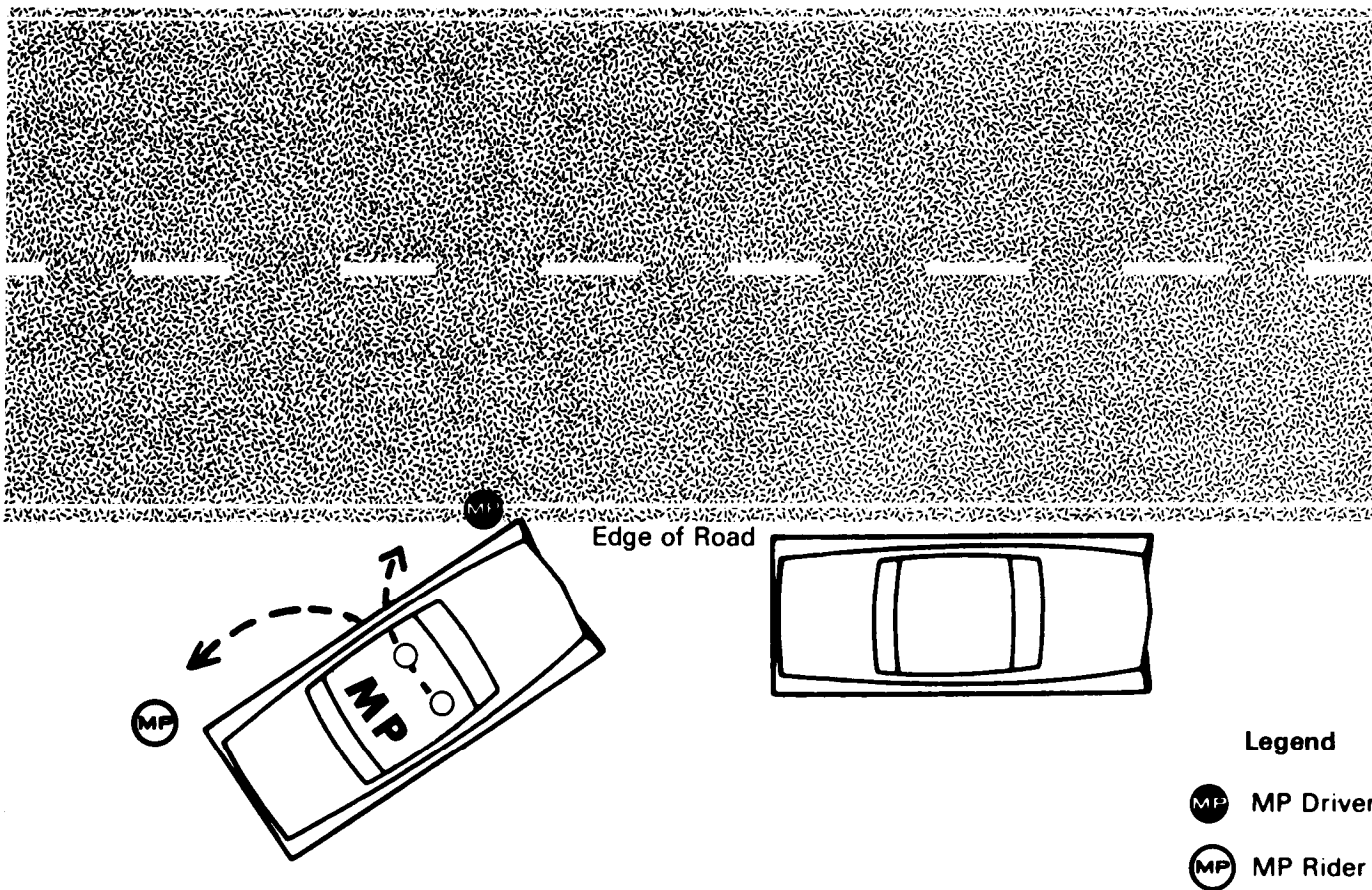
(Maintain clear view of suspect vehicle.)

**Approach**

The senior MP takes command of the situation and announces, **"Military Police! You are under apprehension! Turn off your motor and drop your keys to the ground!"**

**Make sure the felon's hands are visible.** Order him to place both hands on top of his head against the windshield or to stick both hands and arms out the window. Use a combination of these methods if there are several occupants in the vehicle.

The assisting patrol parks to the rear of the first patrol. MPs take positions near the first MP vehicle and provides assistance. They cover the



*Position of MPs and Their Vehicle When Stopping a Dangerous Felon*

first patrol. They help as directed to search, guard and report to the desk.

**Remember: The senior MP from the first patrol remains in charge to avoid any confusion. He lets the felon know that additional MPs are present.**

The senior MP then announces:

**“Driver, open the car door—get out with your hands up!”**

**“Passengers, raise your hands to the car ceiling!”**

He orders the suspects away from their vehicle and into a prone search position on the ground or into a kneeling search position.

The first MP driver then accomplishes the following:

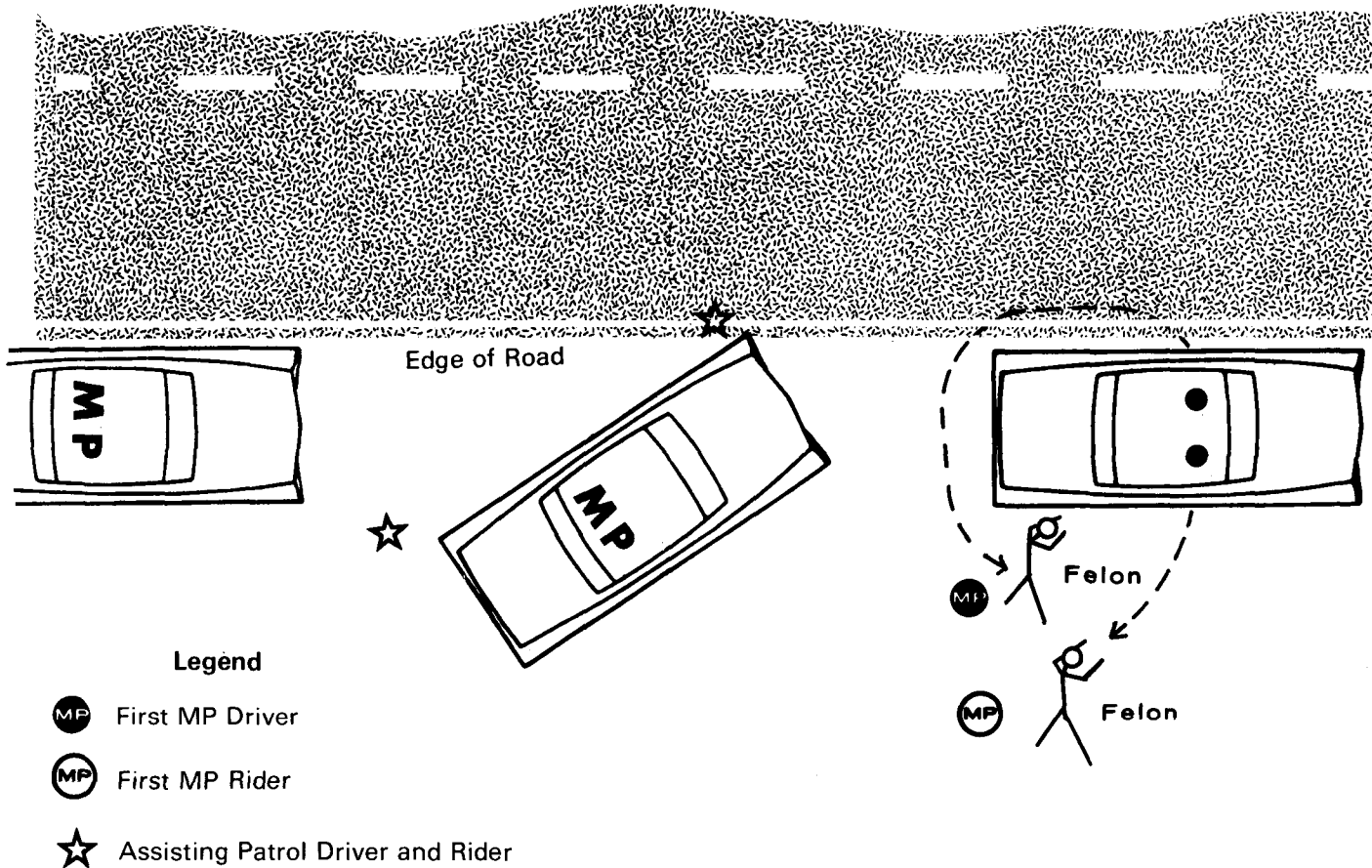
Search the suspect for weapons and evidence.

Handcuff and place the suspect in the backseat of the patrol vehicle under guard. (Use the back seat of the assisting patrol vehicle for additional people.) The duties of the first MP rider include:

After each suspect has been removed from the car, search the vehicle for weapons and evidence. (Search the driver’s seat, the seats where any passengers were sitting and the area under “each seat.”)

Seize any items found and any items observed in plain view.

See Chapter 15 for additional information on searches, seizures of property and apprehensions.



*Assisting Patrol and First Patrol Approaching a Dangerous Felon*

Include the following information in your report to the desk:

- Number and sex of persons arrested
- Additional patrol(s) if needed
- Description of items seized
- Secure the vehicle under guard
- Report departure

## Minor Violators

After stopping a minor violator, you must take whatever action is necessary—giving a warning, issuing a citation, or apprehending the violator if it's a more serious offense. Normally, an MP must maintain the highest degree of military courtesy and bearing. If the violator is an officer, a salute is rendered. Military rank, "Sir," or appropriate civilian titles will be used at all times.

The following is sound procedure for minor violators:

**Greet** the violator

**Identify** yourself

**Tell him why** you stopped him

**Tell him what** action you are going to take

**Request** identifying papers.

For example:

"Good morning, sir, I am Private Doe of the post Military Police. I stopped you because you were driving 30 mph in a 20 mph zone. I am going to issue a violation notice. May I see your driver's license, vehicle registration and ID card (if needed), please?"

Normally violators will offer excuses, rationalize their actions or admit guilt. You should allow the violator to talk, since this permits release of tension. You should not respond with any comment. The rights of the violator must not be violated. If it is necessary to ask any questions concerning the offense, or, if the violator is

suspected of a more serious violation, he must be advised of his legal rights immediately.

As an MP, you must take appropriate action without wavering, regardless of excuses offered by the violator. When this is completed, the violator's documents are returned, one by one, with any necessary information. The violator is then allowed to proceed safely into the traffic flow. If traffic is very heavy, the MP should assist.

**Caution:** You must be alert to the possibility that the violator may attempt to flee the scene. Be prepared to use necessary force.

## DD Form 1805, Violation Notice

DD Form 1805 is used by law enforcement personnel in conjunction with the US magistrate system to process and dispose of certain categories of minor offenses. The objectives of the system are:

Efficient commitment of judicial and clerical time.

Simple but sure method of accounting for tickets and fines.

Convenience to the public.

Better enforcement of minor offense laws.

To implement this system, the installation provost marshal must coordinate and comply with the guidelines of the local US district court. This includes issuing a list of offenses for which a DD Form 1805 may be issued; offenses for which a fine may be sent by mail; and offenses that require a mandatory court appearance. The list also must include the amounts of fines. Guidance for referring violators to the US magistrate also must be established.

DD Form 1805 will be used to refer violations of state traffic laws made applicable to the military reservation (Assimilative Crimes, 18 USC 13) and other violations of Federal law to the US magistrate in accordance with the district court magistrate's policies. DD Form 1805 should be used for operators of both privately owned and government vehicles.

## Preparing Form 1805

- |  |  |
|--|--|
| <b>All Violations Require:</b>         | MP identification number   |
|  | Date of notice   |
|  | Description of violation (time and place)                          |
|  | Violation and location code number                                 |
| <b>Parking Offenses Also Require:</b>  | Vehicle description (make, color, type)                            |
|  | License plate number and state                                     |
|  | Driver's license number  |
|  | Driver's address   |
|  | Driver's name, rank, SSN, and unit (military) or status (civilian) |
| <b>Moving Violations Also Require:</b> | Driver's birth date, sex, race, height and weight                  |

**All of the above information is required for nontraffic offenses.**

- |   |   |
|---|---|
| <b>Mandatory Court Offenses Require all of the above (except a fine), plus:</b> | Location of the court   |
|   | Time and date of appearance (if known)                          |
|   | Check in Box "A"<br>(Box "B" if voluntary appearance requested) |

DD Form 1805 is a four-ply document issued in books of 10. Provost marshal offices are responsible for maintaining accountability of these tickets. **MPs do not collect, accept or otherwise keep track of fines** paid or unpaid; and they take no other action concerning nonpayment unless requested to do so by the court concerned.

When a ticket is issued, distribution is as follows:

- 1st copy (white)—Return to PM office for transmittal to court
- 2d copy (yellow)—Same as copy one
- 3d copy (pink) —Return to PM office for file
- 4th copy (envelope)—Issue to violator (or place on windshield)

## **DD Form 1408, Armed Forces Traffic Ticket**

DD Form 1408, Armed Forces Traffic Ticket, should be used in lieu of DD Form 1805 for all traffic violations of military regulations. Form 1408 may also be used as a written warning for those violations under conditions outlined by local command policy. Several written warnings to an individual, viewed collectively, can indicate a disregard for traffic regulations and safety, or an inadequately trained driver.

The MP must enter the circumstances which prompted him to issue a warning rather than a citation on copy number 2 of the form.

## **Related Actions**

In addition to citing violators for traffic offenses, other actions may be taken, such as checking the **validity of registration documents, license plates, leave documents, visitor permits, etc.**

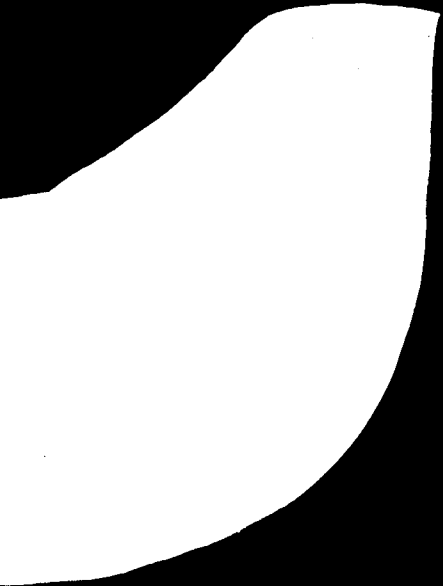
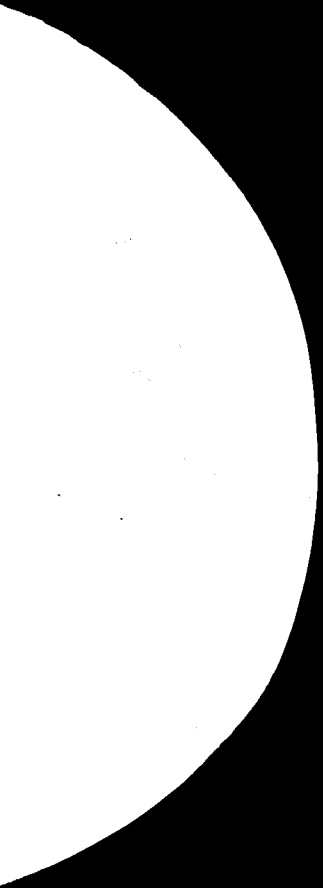
If a traffic offense is a serious one, you should **record witnesses**. You may have to obtain **written statements** at the scene or at a later date.

Military Police are responsible for **securing personal property of apprehended violators**. Property must be inventoried under a prescribed method established by SOP, and a chain of custody established.

**Traffic Accident  
Investigation**









## Responsibilities

Traffic accidents are extremely confusing events. How they occur, who or what causes them, and why they occur are factors the Military Police must determine. This section provides information and guidance on how to fulfill the Military Police mission of reporting and investigating traffic accidents.

### Provost Marshal

The provost marshal is the **principal staff officer concerned** with traffic accidents. The PM's responsibilities include:

Advising the commander on plans, policies, procedures, and equipment needed to insure traffic accident investigation and reporting, and traffic safety.

Preparing, coordinating, and implementing traffic accident investigation/reporting; safety; control; and information programs.

Maintaining upto-date statistics on accident and enforcement programs, with the aim of improving safety, and reducing the number of traffic accidents.

Coordinating desired safety programs with the installation safety office, information office and schools.

### Military Police

Every MP must know the fundamentals of traffic accident investigation and know how to prepare traffic accident reports. It is recommended that **traffic accident investigation teams**, provided

for in TOE 19-510H, be responsible for investigation of all accidents. Each team of one MP supervisor (E5, 95B20, ASI Q9) and one senior MP (E4, 95B10, ASI Q9) will be able to properly and uniformly investigate and report traffic accidents. The duties of **MP traffic accident investigators** are as follows:

- Conduct traffic accident investigations.
- Complete reports.
- Enforce traffic regulations, rules and orders.
- Develop recommendations to reduce traffic accidents and promote safety.
- Provide the provost marshal and commanders with necessary information to take appropriate action against traffic offenders.

## MP Operations Section

- Supervise the overall traffic accident investigation program.
- Recommend to the PM information on procedures for gathering traffic information, training requirements and traffic control/circulation plans.
- Review reports for completeness and correctness.
- Coordinate safety and prevention programs with other offices and agencies.
- Inform personnel on changes in speed limits, traffic control devices, traffic flow and other traffic information.

## Desk Sergeant

- ◆ Receive reports of traffic accidents/incidents and dispatch investigators, if necessary.
- ◆ Insure correctness of completed forms.
- ◆ Insure appropriate entries are made on records maintained at the MP desk, such as the blotter and radio log.

## Patrol Supervisor

- Proceed to scene of traffic accidents and insure necessary traffic control is established.
- Assist the investigation team, if necessary, or provide supervision to individual shift patrol members.

## Military Police Investigators And CID Special Agents

Investigators or special agents may assume investigative responsibility in accidents in which other offenses contributed to or resulted from the accident. Military Police will notify the supporting USACIDC element whenever a traffic accident involves a fatality or an offense within CID investigative responsibility as described in AR 195-2. In all cases, MPs will complete the investigation of the actual accident and provide a copy of the report to the USACIDC element.

Since the installation commander has ultimate responsibility for traffic accident investigation, reporting, and safety, other persons on his staff will also be involved in traffic programs. This may be the primary and special staff (such as facilities engineer, staff judge advocate, transportation officer, surgeon, information officer and explosive ordnance officer).

## Essential Elements Of an Investigation

DA Form 3946, Military Police Traffic Accident Investigation Report, when properly completed, contains the essential investigation elements—**who, what, when, where, why and how**. Alone, or supported by scaled diagrams, photographs and statements, it provides this necessary information. The following guidelines may be used to determine the required depth of an investiga-

tion. This information can provide for maximum effective use of MP resources in investigating traffic accidents.

Use DA Form 3946 only under the following conditions:

- ◆ No government vehicles involved and no government property damaged.
- ◆ No incapacitating or fatal injuries.
- ◆ No evidence of a related serious offense.

Extensive investigative effort is required to support the conclusion of Form 3946 in the following situations:

- ◆ Government vehicle involved or government property damaged. When the accident occurs off-post or outside US jurisdiction, coordination with civilian authorities is necessary.
- ◆ Fatal injury.
- ◆ Incapacitating injury. This is an injury which prevents the injured person from walking, driving or continuing normal activities. It does not include momentary unconsciousness, broken fingers or toes, or simple complaint of pain.
- ◆ There is evidence that a serious offense has been committed, such as driving under the influence, hit and run, or reckless driving.
- ◆ There is extensive damage to private vehicle(s), making it impossible for the vehicle(s) to be driven away safely and normally.

## Preparing for Investigation

As an MP investigator or CID special agent, your preparation begins with yourself. You must meet these criteria:

- ✓ Present a favorable appearance and bearing.
- ✓ Be technically proficient.
- ✓ Remain calm and guard against injecting personal opinions and emotions while investigating.

You should have the following **investigative equipment**:

- ✓ 100-foot (30-meter) metal-reinforced fabric measuring tape or plastic-coated fiberglass measuring tape.
- ◆ Accident investigator's template.
- ◆ DA Form 3946.
- ◆ Paper and ruler.
- ✓ Hammer, nails and stakes.
- ◆ Yellow lumber crayon or chalk.
- ◆ Spray paint in aerosol cans for marking roads (yellow or orange best).
- ✓ Steel pins to anchor end of tape and mark its length when making long measurements.
- ◆ Lead weight with hook to anchor end of a tape when pins cannot be used.

The following **protective and first aid equipment** is needed:

- Blankets
- Flashlight
- Flares or fuses (red signal flares)
- Portable reflector or flashing lights
- Warning flags and stanchions
- Engineer tape
- Reflectorized vests
- First aid kit
- Traffic cones
- Fire extinguisher (dry chemical)

You need these items of **equipment on your vehicle**:

- Warning lights
- Public address system
- Spotlight
- Siren.

The following **rescue items** are needed:

- Pinch bar
- Heavy scissor-type jack
- 25-foot (8 m) tow chain or cable
- Shovel
- Axe
- Wrenches.

For **office equipment** you'll need:

- Office space
- Drawing board and instruments
- Filing cabinets
- Wall space for accident maps and diagrams.

## Training Courses

### Motor Vehicle Traffic Management/Accident Investigation and Prevention Course—

A three-week course for commissioned officers conducted by the Traffic Institute of Northwestern University.

### Traffic Management/Accident Investigation Course—

A Three-week course for enlisted personnel given by the Department of Security Police Training, Lackland Air Force Base. (The award of Additional Skill Identifier Q9 is authorized upon successful completion of this course).

### Traffic Accident Investigation Course—

A three-week course conducted by the Seventh Army Combined Arms Training Center, US Army Europe. (ASI Q9 is authorized for award upon successful completion of this course.)

## Classification, Terminology, Factors and Stages

Traffic accidents are classified by type and severity.

### Type

- Overturned
- Other noncollision
- Collision with pedestrian
- Collision with motor vehicle
- Collision with motor vehicle on other roadway
- Collision with parked motor vehicle
- Collision with railway train
- Collision with pedalcycle (2 or 3 wheels—no motor)
- Collision with animal
- Collision with fixed object
- Collision with other object.

### Severity

- Fatal (within 12 months)
- Incapacitating injuries
- Nonincapacitating evident injuries
- Possible injuries

- Disabling damage to vehicle (cannot be moved)
- Functional damage to vehicle (can move, but would not be safe)
- Other damage to vehicle (minor damage, not unsafe).

## Terminology

These definitions are provided to insure standardized definition and reporting which aid in analysis:

**Trafficway**— The entire width between property lines, or other boundary lines, of every way or place of which any part is open to the public for purposes of vehicular travel as a matter of right or custom. All highways are trafficways, but trafficways also include some areas on private property such as shopping centers.

**Highway**— The entire width between the boundary lines of every way publicly maintained when any part thereof is open to the use of the public for purposes of vehicular travel; a street; a publicly maintained trafficway.

**Road**— The part of a trafficway which includes both the **roadway**, which is the travelled part, **and any shoulder** alongside the roadway. Where there are uncountable curbs, the road and roadway are the same. If there is a guardrail, the road is considered to extend to the guardrail.

**Roadway**— That portion of a highway improved, designed, or ordinarily used for vehicular travel, exclusive of the berm or shoulder. In the event a highway includes two or more separate roadways the term roadway as used herein, shall refer to any such roadway separately, but not to all such roadways collectively.

If there is a curb, the roadway is considered to extend to the curb, hence roadway may include lanes commonly used for parking. If there is a paved shoulder, the roadway may be distinguished from the shoulder mainly by a painted line marking the edge of the roadway.

**Shoulder**— That portion of the road contiguous with the roadway for accommodation of stopped vehicles, for emergency use and for lateral support of the roadway structure.

The line between the roadway and the shoulder may be a painted edge line, a change in surface color or material, or a curb. On

some modern trafficways, there may be a surfaced shoulder on the right side, and frequently a narrow shoulder on the left side of a one-way roadway.

**Motor Vehicle**— Every vehicle which is self-propelled and every vehicle which is propelled by electric power obtained from overhead trolley wires, but not operated on rails.

**Traffic**— Pedestrians, ridden or herded animals, vehicles, streetcars, and other conveyances, either singly or together, while using any highway for purposes of travel.

**Pedestrian**— Any person not in or upon a motor vehicle or other road vehicle.

**Driver**— Person who drives or is in control of a vehicle.

**Motor vehicle traffic accident (crash)**—An unintended event involving one or more moving vehicles, occurring on, but not limited to, a trafficway, which results in property damage, personal injury or death.

**Pedalcycle**— A vehicle operated solely by pedals, propelled by human power, such as a bicycle or tricycle.

**Accident factors**— Combinations of simultaneous and sequential (in sequence) circumstances which cause an accident.

**Accident investigation**—Detailed systematic search to uncover facts (who, what, when, where, why and how) and determine the truth of the factors.

**Collision diagram**—A plan of an intersection or section of roadway on which an accident occurred. It is drawn by means of arrows showing the manner of collision. Date, time and road conditions are entered on one of the arrows representing each collision.

**Property damage**— A loss suffered by a person, firm or other entity when property is marred, defaced, spoiled, ruined or destroyed.

**Simultaneous factors**— Factors which must be present at the same time to cause an accident.

**Sequential factors**— Factors which are away from the crucial event of the accident. Certain actions that set up situations which may increase the probability of an accident.

## Factors

The three factors involved in traffic accidents are **operational, condition and remote condition.**

**Operational factor** is any unconventional or hazardous behavior or negligence by a road user which contributes directly to the accident. This can be any of the following:

**Speed**— Greater or lesser than a safe normal speed:

Making it impossible to follow a desired curve.

Making it impossible to take successful evasive action.

Presenting unusual surprise to other traffic units.

**Initial Behavior**—

Unusual action (skidding or spinning out).

Illegal actions (driving on wrong side of road).

Hazardous actions (excessive lane changing).

**Delayed Perception**—The failure to perceive and safely respond to the impending danger of a possible accident, caused by inattention or distraction.

**Faulty Evasive Action**— Evasive action is taken when the road user reacts to a dangerous situation after the perception of the danger. This may be slowing, stopping, accelerating or turning. It is faulty and can be an operational factor when it is not taken or wrongly taken.

**Condition Factor** is a condition which contributes to an operational factor. There may be one or more condition factors, such as skidding on a curve (an operational factor) and slippery pavement (a condition factor).

**Remote Condition Factor** is an act or condition which sets up an operational factor.

A road with severe potholes in it is a remote condition factor. If a vehicle with bald tires hits a pothole and a tire blows out, that's a condition factor. If a car swerves into the opposite lane and another car collides with it, that is an operational factor.

## Stages

Each traffic accident has a number of stages or chain of events. Every accident will have a key event; however, not all accidents will include all possible stages.

**1. Point of Possible Perception**— time and place at which the unusual or unexpected movement or condition could have been perceived by a normal person.

**2. Point of Perception**— time and place at which the danger is perceived or actually seen. This point comes after the point of possible perception. Perception time is the period between these two points. (This point does not exist in all cases—as when a driver falls asleep at the wheel.)

**3. Point of No Escape**— time and place, after which the traffic accident cannot be avoided. It may occur before or after the point of perception.

**4. Key Event**— the most important stage of an accident. There is only one key event—it is determined by the first harmful event. It determines the exact time, place and type of accident. It may be one of the following:

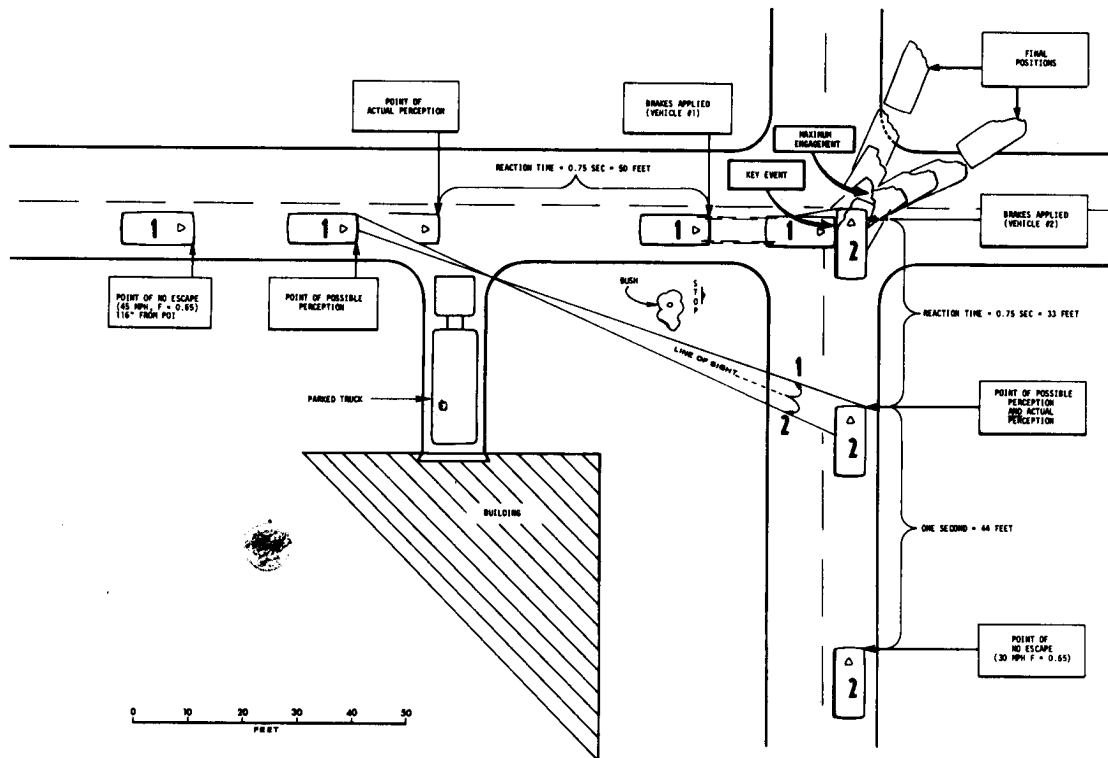
- Collision on the road—When traffic units have made their first contact (point of initial contact)
- Noncollision on the road—When only one traffic unit is involved, and the key event occurs on the road.
- Collision or Noncollision Off the Road—When the first harmful event occurs after the traffic unit leaves the roadway.

**5. Point of Maximum Engagement**— the time and place in a collision at which traffic units are forced together as much as they will be. It follows the point of impact.

**6. Final Position**— place where the objects involved in a traffic accident finally come to rest. Any collision following this stage should be considered as another traffic accident.

**7. Other Events**— The following are other events or stages which appear to a lesser degree in a traffic accident:

- Encroachment - Movement into the lane, path or area designated to another traffic unit.
- Start of Evasive Action. When first action to avoid accident occurs.
- Disengagement - The separation of units involved in a collision.



*Stages of Accident or Chain of Events*



## Methods

To be most effective, Military Police investigators at an accident scene must be organized. They must conduct their investigation in an orderly and efficient manner. This chapter discusses the methods used in investigating traffic accidents. It includes initial steps, arrival at the accident scene, securing facts, actions after securing facts and special considerations.

### Initial Steps

Prompt arrival at the scene of an accident is essential. Safety, however, should be emphasized at all times. Speed limits apply to all vehicles, including emergency vehicles, and should not be exceeded unless local policy permits, and the situation warrants such action. While enroute, the MP should maintain contact with the Military

Police desk. He should also be on the lookout for any suspicious or damaged vehicles fleeing the general area.

While enroute to the scene, the patrol should obtain as much preliminary information as possible concerning the accident. Such information includes:

- Location
- Time of notification
- Who notified the patrol and how
- Weather and visibility conditions.

General information as to seriousness of the accident—injuries, hit and run, amount of traffic congestion, etc.

Whether or not additional support is proceeding to the scene, such as wrecker, ambulance, or additional Military Police patrols.



By obtaining such information prior to arrival at the scene, the investigators may more quickly and efficiently respond to the needs of the situation.

## Arrival at the Scene

The following steps should be taken upon arrival at the scene of an accident.

### Locate Patrol Vehicle

The MP vehicle **should not cause further traffic congestion**. If necessary, it may, however, be used as a roadblock. At night it should be parked so the headlights illuminate the entire scene. During day or night emergency lights should be on to warn approaching motorists of the hazard.

### Care for Injured And Protect Property

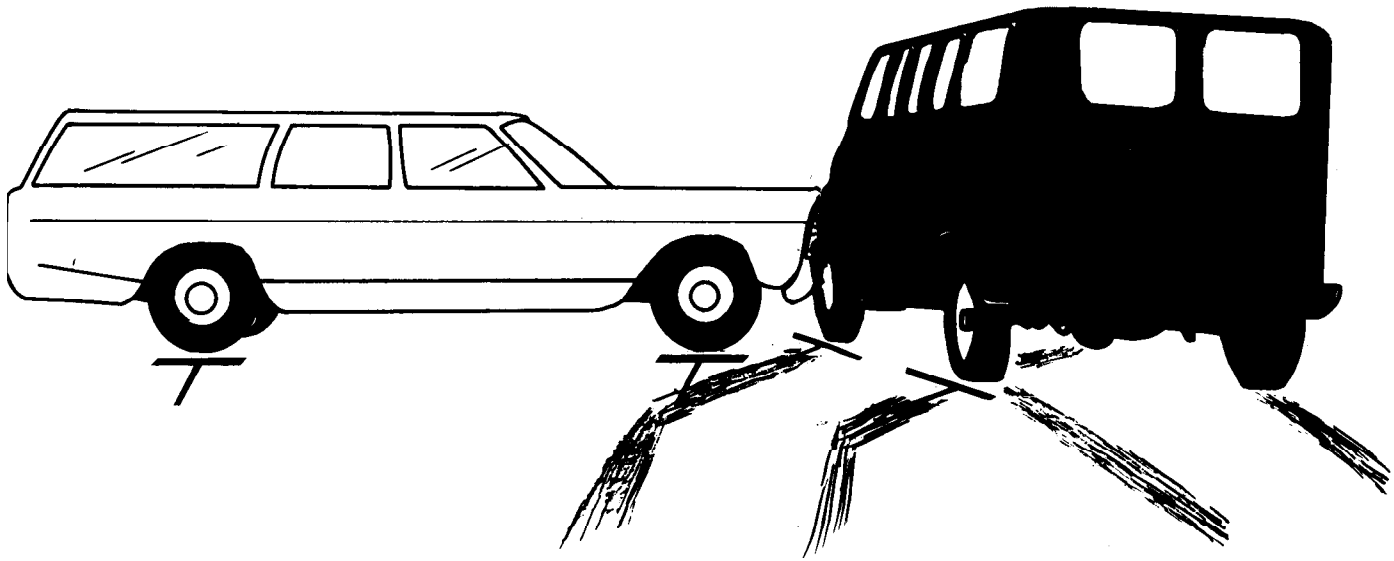
The investigators should determine the extent of injuries, if any, to accident victims; render first aid; and request medical assistance, if necessary. Severely injured persons should not be moved,

except to preserve their safety. The position of all victims should be noted for report purposes and, if on the road, the positions outlined in chalk. Final determination of death is made by a doctor.

After caring for the injured, the scene should be secured to protect property and preserve evidence. Personal property of accident victims must be protected. In case of accidents involving fatalities or felonies, the desk sergeant should be notified to alert the duty CID special agent. Any classified documents found at the scene should be safeguarded and reported to the unit or nearest military intelligence officer.

### Establish Traffic Control

Traffic control is essential at an accident scene to prevent further accidents or injury. If additional MP support is necessary, it should be requested. Under certain conditions it may be necessary to establish control procedures prior to aiding the injured, to prevent further injury. Rerouting vehicles around the accident scene is the most common procedure used. Military personnel at the scene may be temporarily used to help control traffic or perform other duties, if necessary. All other spectators or unnecessary persons should be cleared from the accident area.



*Marking Wheel Locations*



## Additional Support

Additional support personnel should be requested, if necessary, such as facilities engineers (for fire trucks; powerline repair; road repair; water pipe repair; and portable lighting), signal personnel (for telephone repair or photography), medical personnel (for ambulance, special medical equipment), and civilian police personnel within their jurisdiction.

## Moving Vehicle And Marking Wheels

The decision to move a vehicle from its final position must often be made by the MP patrol arriving at the scene. When this is done, the positions of the wheels should be marked on the ground so they can be relocated for investigative purposes.

Under the following conditions, a vehicle must be moved immediately:

- When an injured person is trapped in the wreckage and cannot be treated there.
- When a person is trapped in wreckage near burning material, or an area of potential fire hazard.
- When a vehicle position is an immediate hazard to oncoming traffic and adequate traffic control cannot be established.

## Securing Facts at Scene

After completing the initial steps and securing the scene of the accident, the investigators obtain and record facts needed to complete their report and to arrive at logical and objective conclusions. Prior to forming conclusions, however, all facts concerning the accident must be obtained. The main thrust of the investigation is to determine whether or not there was a violation of the law; and if so, to prove

each element of the offense. The following are steps to be taken in securing the facts.

## Identify and Preserve

### Fragile Evidence

Any fragile evidence that can be damaged, altered, destroyed or removed from the scene by any willful or negligent act must be identified and secured. Prior to removal, its position should be noted, sketched, photographed and/or marked in chalk. Examples of such evidence are puddles of gasoline, oil, blood or pieces of broken glass. The position of turn signal levers should be checked. Alcoholic beverage containers inside a vehicle should also be secured. Evidence should be tagged, marked, and secured in accordance with AR 195-5 prior to its removal from the scene.

## Take Statements

Questioning and taking statements of witnesses and victims should be done at the scene. If this is not possible, statements should be taken as soon as possible at the MP station or homes of those involved. All persons who have knowledge pertinent to the investigation should be requested to make and sign written statements.

Questioning and statements of **suspected persons** should be conducted in accordance with Article 31, UCMJ. Witnesses, drivers and passengers should be questioned individually, out of hearing range of others. A careful check of each statement should be made to disclose any discrepancies. These should be clarified at the scene.

Format of statements should consist of a combination of narrative and questions and answers. Drivers and passengers should include their vehicle locations and personal reactions when they first realized an accident might occur. When accidents happen off-post, involving military vehicles, or in host countries, a combined investigation may be made with civil law enforcement authorities. If the scene has been cleared before arrival of Military Police investigators, a copy of the civil report can usually be obtained for

use in preparing the MP report. A form such as the one shown on page 60 can be used to obtain information from drivers not suspected of any wrongdoings. It may be locally reproduced.

## Recording Observations

After gaining all the information possible from all persons involved in the accident, the investigator begins to examine the physical condition of the scene, and to record his observations.

### Vehicle Final Rest Position

The examination should start where the vehicle came to final rest. Debris or broken parts from vehicles, with other indications, will help locate the key event and indicate the paths of the vehicles involved. Marks or traces such as skid or scrape marks help the investigator locate pertinent points accurately. All marks, puddles, bits of metal and contents of vehicles must be located and their positions measured and recorded. Skidmarks are very important since they show position and direction of travel, evasive action or unlawful behavior. Note especially things that would help locate the point of first contact, such as changes in skidmarks, chips in pavement and damage to roadside objects.

### Path of Vehicles

The investigator should next retrace the paths of the vehicles involved. Note visibility, condition of signs and signals, road surface condition, traffic volume, angles of view and possible distractions.

### Vehicle Search and Inspection

A careful inspection of vehicle equipment and contents is necessary. Items affecting vehicle control should be particularly checked, such as tires, brakes, lights, steering, signals and safety equipment. A vehicle may require further examination by a qualified mechanic to verify certain conditions.

For example, it is important to know whether a tire blew out as a result of the accident, or whether a tire blowout was a possible contributing factor of the accident. This fact can be determined by analyzing skid and scuff marks. Contents of the vehicle may also give important information concerning the identity, residence, occupation, destination and position of vehicle occupants.

## Sketches

Depending on the type and severity of an accident, sketches are made, which may range from a simple sketch on DA Form 3946, to detailed scaled drawings on separate sheets. **Sketches serve four purposes:**

- Help explain the accident.
- Help the investigator reveal facts.
- Locate any given point at the scene.
- Serve as the basis for accurate scale drawings.

Field sketches are made at the scene and are used to support the MP's original notes. The following information must be placed on sketches and scaled drawings:

- ▶ Time of the accident (date and hour).
- ▶ Names of roads. If on a rural highway, show the distance to the nearest identifiable landmark.
- ▶ Direction of North.
- ▶ Names, SSNs and units of MPs making measurements and drawings.
- ▶ Report or case number.
- ▶ References to photographs taken.

## Steps in Preparing a Sketch

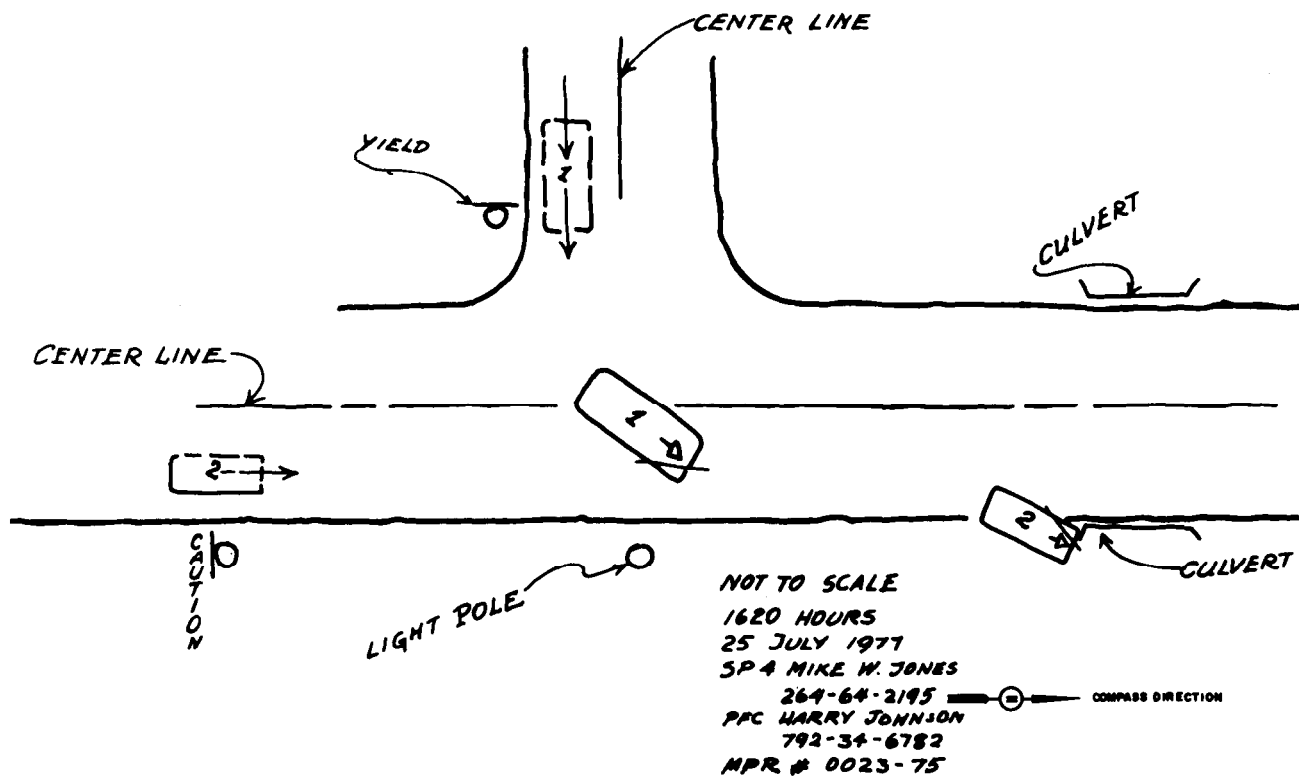
1. The investigator first draws the **roadway, shoulder and other areas of the scene** which are pertinent to the investigation. This includes any physical characteristics which may constitute contributing factors to the cause of the accident, or which will be used as base points.

2. **Base points** are then drawn on the sketch.

REPORT OF DRIVER INVOLVED IN ACCIDENT

NOTICE TO DRIVER - THIS IS YOUR REPORT OF WHAT HAPPENED IN THE ACCIDENT. ANSWER EACH QUESTION COMPLETELY.

1. I was driving \_\_\_\_\_ on \_\_\_\_\_  
(Direction) (Street)
2. I first saw the other car when it was \_\_\_\_\_  
(Feet or car lengths)  
 (A) I was going \_\_\_\_\_ at this time.  
(Miles per hr)  
 (B) The other car was going \_\_\_\_\_ at this time.  
(Miles per hr)
3. I was going \_\_\_\_\_ when the impact occurred.  
(Miles per hr)
4. The other car was going \_\_\_\_\_ when the impact occurred.  
(Miles per hr)
5. My car went \_\_\_\_\_ after the impact.  
(Feet or car lengths)
6. To avoid the accident I \_\_\_\_\_  
 \_\_\_\_\_
7. I \_\_\_\_\_ move my car before the officer arrived.  
(Did or Did Not)
8. In my opinion, the accident was caused by \_\_\_\_\_  
 \_\_\_\_\_  
(Describe action of yourself or other person)
9. If you were injured, describe briefly \_\_\_\_\_  
 \_\_\_\_\_
10. Note below names and addresses of your passengers and additional explanation of accident, if necessary.
11. Seat belts in use? YES \_\_\_ NO \_\_\_  
 \_\_\_\_\_  
(Driver Sign Here)  
 \_\_\_\_\_  
(Reporting Officer)      Date: \_\_\_\_\_



*Field Sketch Showing Final Rest Position of Vehicles*

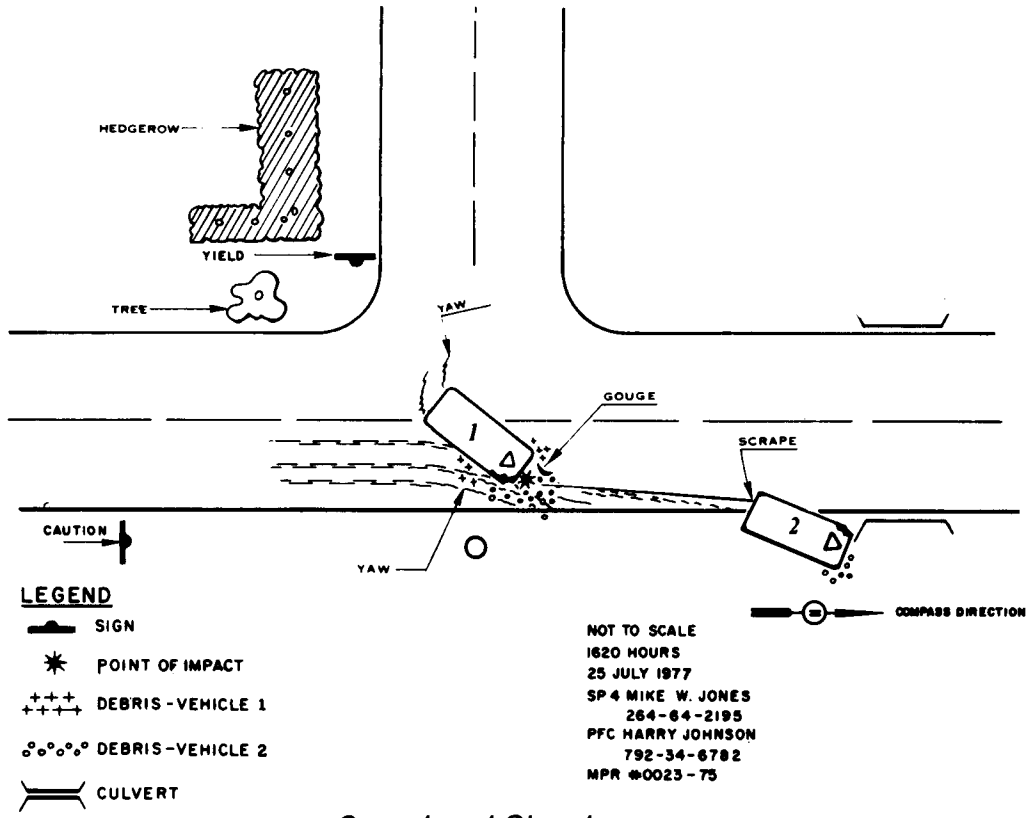
These are those points used in making measurements by triangulation. They are permanent objects such as telephone poles, mileage markers, roadsign posts, etc. If permanent objects are not available, base points can be established by driving wooden stakes into the dirt at the edge of the roadway or driving nails into the asphalt. Measurements are made from the place where the base point meets the ground. If large circular objects, such as telephone poles are used, the exact reference point should be marked with a nail or paint.

3. The next portion of the sketch shows the **final position of the vehicle, occupants and objects** involved in the accident. All damage to the vehicle and other property is also indicated on the sketch. This information should also be entered in the narrative portion of the investigation.

4. The sketch is completed by including informa-

tion on **vehicle marks and debris** at the scene. Vehicle marks include skid and scuff marks, scratches, scrapes and gouges of the pavement and marks left from yaws. These marks will be used in determining speeds of the vehicles involved. Debris is useful in determining the point of first contact. Outlines of the areas in which debris has come to rest is included in the sketch. Debris is usually spread in an elongated pattern in the direction of travel. Points where debris concentration is greatest are also indicated. Notes should be made if there appears to be two or more separate debris areas.

5. After entering identifying information on the sketch, the final step is to **recheck the sketch at the scene**. The investigator should retravel the paths of the accident vehicles at their level of vision height to determine visibility and any obstructions. The sketch must have an understandable legend.



Completed Sketch

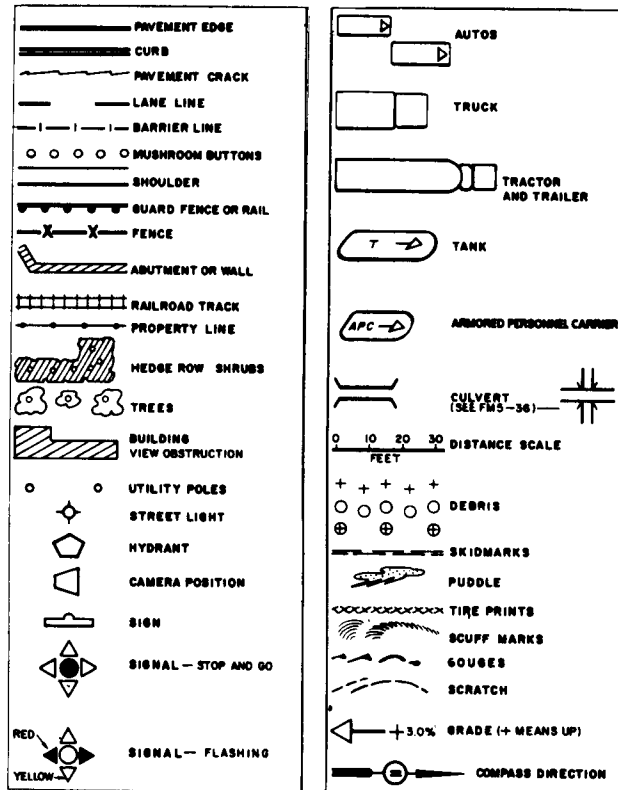
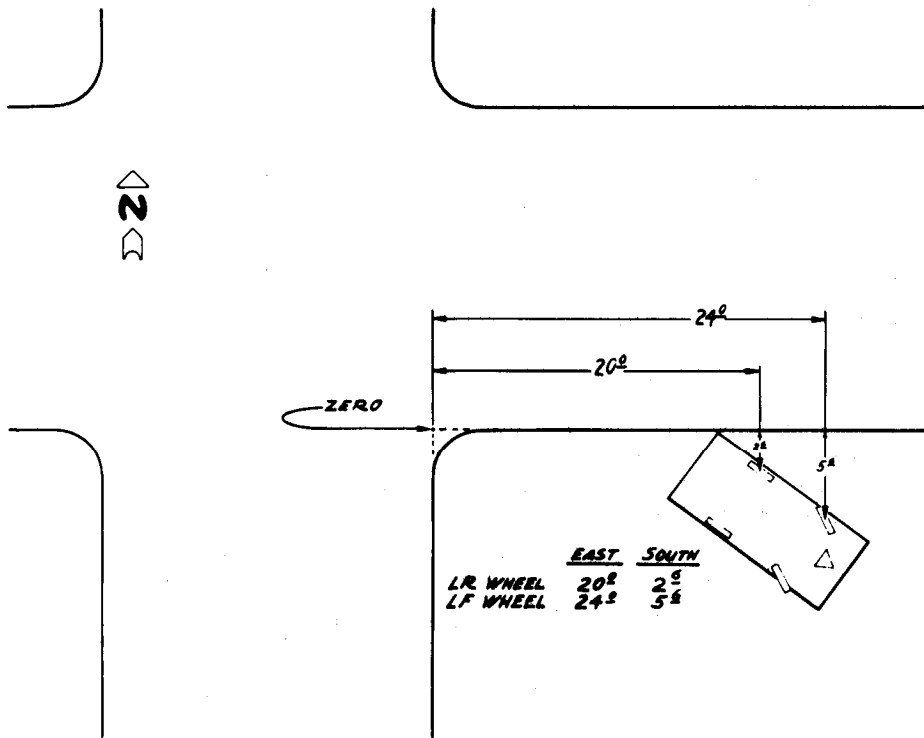


Diagram Symbols for Sketches







*Locating a Vehicle With Coordinate Method*

## Measurements

Accurate measurements are necessary to relocate and relate exact points in an accident scene. There are two methods of making measurements—triangulation and coordinate.

### Triangulation Method

Triangulation is the best method to use on unpaved roads without clean-cut edges or on sharp curves and irregular intersections. The steps in this method are as follows:

Determine two fixed base points, such as telephone poles, edges of buildings, etc.

Measure from both base points to each object such as the accident vehicle.

Write measurements as 12<sup>ft</sup> for 12 feet, 6 inches. The normal symbols for feet (') and inches (") are

not used to avoid misreading or confusion. (Meters are listed in tenths, such as 10.6m).

Fixed base points should be widely spaced to provide wide angles in measuring. Narrow angles increase the probability of error.

Show measurements to the wheel positions on one side of the vehicle or to the front and rear of vehicle if undamaged. Also show measurements to large debris and to victims not in the vehicle(s) involved.

Measure skidmarks from where the road surface first shows any marks of tires grabbing.

### Coordinate Method

This method is best used on roadways with well-defined edges and when measurements are to be made within 25 feet (7 to 8 meters) of the roadway edge.

The edge of the roadway forms one coordinate. The

distance to the object, measured at a right angle to the first coordinate is the other.

A point along the roadway edge is selected as the zero or reference point. Its exact location must be recorded. Measurements are taken from the zero point. Measurements are recorded by compass direction. Measurements may be recorded on the sketch in chart form, thus keeping the sketch from becoming overly cluttered.

## Photography

Photographs are used to supplement an accident investigation and the written report concerning the accident. When used in court testimony, they help indicate and explain the chain of events. Photographs, however, never take the place of an investigation or a report.

The investigator should take as many pictures as necessary to properly depict the accident. They should represent what is actually seen by the investigator, thus scale, angles of view, color and light should be as nearly like what, is seen as possible. Photographs must be taken as follows (minimum):

- ❖ **Establishing Photograph**— This picture should show the scene, the approaches to the scene, and a fixed object in the background to establish the scene.
- ❖ **360-Degree Photographs**— These pictures should show all four sides of the accident scene, that is, looking north, south, east and west.
- ❖ **Damage Photographs**— Close-up pictures of damage to all vehicles and items struck by vehicles involved, to include contact and induced damage.

### Skidmarks and debris

Any persons, materials or marks not included in the original scene should not be included in the photographs. This includes police, wrecker personnel, bystanders, chalk marks, measuring devices, etc.

The locations from which photographs are taken should be recorded on an overlay to the diagram.

They should be numbered in sequence, and a brief description of the picture scene placed on the reverse. For example, "Photo #6 Accident Scene, Facing South." To avoid confusion with other photographs, the first exposure of a roll or series should include a data card which includes the time, date, location and investigator's initials. (Note: The same scene should then be photographed without the data card.)

**Nighttime Photography**— At night, it is more difficult to establish the scene and to see details and distance relationships in photographs. If it is impossible to have permanently fixed objects in the scene to establish the photograph a data board should be used. Greater detail can be achieved by adjusting the f-stop of the camera to allow more light to enter (smaller f-stop). If available, an extension flash attachment will better reveal depth at night. If no flash is available, several photographs taken successively, closer to the object, should be taken. Investigators should go back and photograph the complete area during daylight.

**Photographs in Court**— To be admissible in court, the investigator taking and using photographs should follow these four steps:

- ▼ **Authentication**— Photographic evidence will be authenticated in court by the MP who takes the pictures. A summary describing the incident will be annotated on DA Form 2823 and attached to the negative film packet or recorded on the reverse side of the Polaroid hard copies soon after the photographs are taken. This will assist in authentication.
- ▼ **Marking**— Each roll of film or film pack must be marked with the name of the individual who took the photographs, his SSN, date, time and location of the incident, type of incident, a control number, and the sequence in which the film was used. If it is desirable to point out a specific area of a photograph, an acetate overlay should be used. Never mark directly on the print.
- ▼ **Relevancy**— All pictures must be clear, sharp and free of distortion. They must be relevant to the investigation. Photographs support the testimony. They must not be inflammatory or provide for shock value; particularly photographs of

injuries. Photographs of bodies in relation to the vehicles' position are not, however, considered inflammatory if relevant to support a point of testimony.

▼ **Supportive Only**— Photographs alone do not substantiate facts—they must be supported by testimony. The investigator or photographer must be able to testify that the photos reflect a true representation of the scene.

## Inspection of Vehicles

After sketching, measuring and photographing the accident scene, the investigator should begin his inspection of the vehicle(s) condition and damage. The purpose is to obtain supporting information concerning statements of witnesses and his own conclusions, when made.

**Vehicle condition** is a term used to describe any physical characteristic of the vehicle, existing prior to the accident. Some unsafe aspect may be determined to have been an intermediate or early cause of the accident, such as a bald tire.

**Vehicle damage** is the resulting physical characteristics of the vehicle(s) caused by the accident. Damage is classified as either **contact or induced**.

Contact damage is that which occurs as a direct result of contact with or by an object. It can occur in more than one location on the vehicle.

**Induced damage** is that caused to vehicle parts which did not come in contact with the object struck, but resulted from the shock of the collision.

**Vehicle body condition**— Check locations of damage. The amount of buckling or breaking can indicate the force of the accident. Check for alteration to the frame, body, or suspension, which could have affected the driver's vision or vehicle reaction.

**Tires and rims condition**— Check to see if the tires are fully inflated, have good tread, or show signs of a blowout. Check for tread scrape marks, sidewall scrapes or cuts, which can indicate how well the vehicle held up to braking and sideways skidding. Check rims for fresh scrapes, cuts or

scratches. They may indicate that a blowout occurred prior to the accident.

**Light conditions**— Check all lights for operation and position of knobs and levers used to control lights. These checks are often necessary to verify statements. Note also any lights burning when you arrived at the scene. Check for obstructions to lights such as dirt film. If lights are to be checked by the US Army Criminal Investigation Laboratory, the entire light structure should be sent. If the light switch is on but not operating, perhaps due to the accident, the lab can determine whether or not the filament is intact or broken and whether the break is new or old.

**Glass condition**— The condition of the glass in an accident vehicle can determine whether it may have caused poor visibility and may indicate the manner in which injuries were caused. Check to see if glass is cracked or broken. If cracks are clouded or discolored, the cracks existed prior to the accident. Note obstruction on the glass such as dirt or frost. For side windows note position, up or down, if relevant. Operation of side and rearview mirrors should also be noted.

**Interior vehicle equipment**— Various items of equipment inside the vehicle should be checked for proper operation by a qualified mechanic if necessary. Additionally, the position of equipment may indicate actions or intended actions of drivers. These include the turn signal lever, pedal operation, horn, seat belts, sun visors, ignition switch, accessory switch (especially defroster in cold weather) and gear shift lever. The speedometer may give some indication of speed.

**Miscellaneous equipment**— Check any material inside the vehicle which may have contributed to the accident. This might include alcoholic containers, drugs, toys, etc. In doing this, remember that for other than plain view items, further search of the vehicle will require the owner's or driver's permission or a search warrant. If safety inspection stickers are present, check their validity.

Checks of vehicle damage compared to scratches/gouges on the roadway or other damage to roadway objects may show vehicle position and direction of travel after the key event. The age of

all damage should be determined to relate it to the specific accident. All accident damage and vehicle conditions should be photographed, if relevant to the specific investigation.

## Actions After Gaining Facts

### Clear the Scene

Vehicles are removed safely from the scene under Military Police supervision. Military units usually move their own vehicles. However, if this is not practical, MPs should arrange for a military wrecker. Civilian vehicles normally are removed by commercial wrecker. In this case, the wrecker operator's name, firm, time of departure, and new location of the vehicle should be recorded, especially if further inspection of the vehicle may be necessary.

Roads should be cleared of debris by MPs or unit personnel. Fire fighters should assist when fire hazards, such as large pools of spilled gasoline are present. If a vehicle must be retained as evidence, it is securely impounded and its contents inventoried and recorded.

### Additional Searches

Prior to leaving the scene the investigator should recheck the accident location for any additional marks, debris, victims, etc. If an accident occurs at night, the scene should be searched during daylight also. The reverse of this is also true. Retracing the driver's approach to the scene on the following day at the same time can reveal additional unanticipated evidence.

### Additional Statements

All statements should be taken at the scene if possible. It may be necessary, however, to delay taking statements due to injury or the desire for legal counsel. If statements are taken after the accident, they should be in each person's own words, and on DA Form 2823. If during the course of taking a statement the investigator suspects the person of violating the law, the person must be

warned of his legal rights, and DA Form 3881 must be completed.

## Completing Investigation

Traffic accident investigations must provide accurate explanations of the facts. In addition to DA Form 3946, which should include additional diagrams, statements and photographs, the investigator should prepare a statement. This statement should clearly distinguish between fact and opinion—although opinions are a necessary part of the investigation. The statement should discuss how the accident occurred, identify causes, and list factors that may constitute hazardous driving conditions. All conclusions and recommendations must be supported by fact. After completing the statement, a final check should be made of the reports, any evidence secured, and a notation made that injury information is up-to-date. The completed investigation should be turned over to the desk sergeant or traffic section for review as determined by local SOP.

## Special Considerations

### Alcohol

Use of alcohol by drivers is a factor in over half of all fatal traffic accidents. The investigator may suspect a participant in an accident was under the influence of an intoxicant or drug during the course of the investigation. Should such a suspicion exist, the investigator must follow through to the extent allowed by law, to determine whether or not these suspicions are justified. This will be in the form of chemical tests, or tests of the suspect's blood, breath or urine, to determine alcoholic content. This is done under the implied consent policy outlined in AR 190-5 and discussed further in the section on traffic control. DD Form 1920, Alcoholic Influence Report, will be completed by the investigator concerning observation of the person under suspicion. In addition to testing the suspect, inspection and search of the vehicle may be used to gather additional information. Approved methods include:

- Plain view search of vehicle for intoxicants.
- Detection of odors of intoxicants or other unusual odors.
- Observation of individual's actions.
- Search of the vehicle with permission of driver.
- Search with a search warrant, based on probable cause.

### Medical

Medical statements may be required to reflect expert opinions as to whether medical reasons

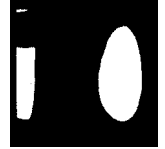
contributed to an accident. The investigator must obtain medical information for the following:

**Personal injuries**— Determine the extent of injuries received by all involved in an accident and any injuries that existed prior to the accident.

**Fatal injuries**— In case of deaths, obtain estimated time and cause of death.

**Tests**— Obtain any information concerning the results of alcohol, drugs or medicine used.

**The accident investigator should recommend to all persons involved in serious accidents that they see a physician immediately.**



## MP Traffic Accident Report Form

DA Form 3946, Military Police Traffic Accident Report, is prepared on all accidents reported to the Military Police. This form is one of the special tools needed to make sense out of the confusion at the accident scene.

### General Instructions

Form 3946 is used to accomplish the following:

Record information concerning traffic accidents reported to and investigated by the Military Police.

Provide information to the commanders concerning accidents involving members of their commands.

Provide information concerning accidents to those involved in the accident, or their representatives.

Provide management information for analysis, review and development of accident prevention and safety programs.

The form is designed for one or two-car accidents. If three or more vehicles are involved, you must continue on additional forms.

There is one **rule for numbering the vehicles involved** in an accident:

**Military vehicles are always designated Vehicle Number 1** if a military vehicle is involved. If there are no military vehicles involved, or if all the vehicles are military, then numbering is based on **whatever is easier or makes sense** to the person completing the form.

If continuation forms are used, the drivers and occupants should be listed on the same form as their respective vehicles.

USE TYPEWRITER OR BALL POINT PEN - PRINT FIRMLY.

MILITARY POLICE TRAFFIC ACCIDENT REPORT										PM ACTIVITY CODE/REPORT NO.					
For use of this form see AR 190-45 the proponent agency is Office of The Provost Marshal General.															
DATE OF ACCIDENT		TIME (USE 2400 HOUR)		DAY OF COLLISION		☐ SUNDAY		☒ MONDAY		☐ TUESDAY					
77	MO 04	DAY 30	2315 HRS	☐ WEDNESDAY		☐ THURSDAY		☐ FRIDAY		☐ SATURDAY					
MILITARY RESERVATION				ROAD OR STREET ON WHICH ACCIDENT OCCURRED				NAME AND LOCATION OF MILITARY RESERVATION, CITY, STATE, ETC							
☒ ON ☐ OFF				THOMAS ST				FT BLANK, AL 36201							
AT INTERSECTION		NAME OF INTERSECTING STREET		NOT AT INTERSECTION		NAME OF NEAREST INTERSECTING ST. HIGHWAY, OR OTHER PERMANENT IDENTIFYING LANDMARK		NO. OF FEET		DIRECTION					
N/A				38th ST				25		W					
IF ACCIDENT OCCURRED OFF MILITARY RESERVATION AND OUTSIDE CITY LIMITS INDICATE _____ MILES ☐ N ☐ S ☐ E ☐ W FROM ☐ CITY LIMITS ☐ CENTER OF CITY OR TOWN															
KIND OF LOCALITY ☐ TROOP BILLETTS ☐ RESIDENTIAL ☐ MFG OR INDUSTRY ☐ OPEN COUNTRY ☐ SCHOOL OR PLAYGROUND ☐ OTHER															
TYPE ACCIDENT										TOTAL NO OF VEHICLES INVOLVED		SEVERITY			
☒ VEHICLE-VEHICLE ☐ VEHICLE-PEDICYCLE ☐ STOLEN VEHICLE ☐ OTHER										2		NO KILLED NO INJURED			
☐ VEHICLE-OBJECT ☐ VEHICLE-RR TRAIN ☐ SINGLE VEHICLE (NON COLLISION)												☒ PROPERTY DAMAGE ONLY			
☐ VEHICLE PEDESTRIAN ☐ HIT & RUN															
WEATHER, LIGHT AND ROAD CONDITIONS															
VEHICLE 1		DRIVING LANES		VEHICLE 2		CHARACTER		VEHICLE 3		VEHICLE 4					
ONE		↑		CURVE		SURFACE		CONDI-TION		DEFECTS					
X X		X X		X X		CONCRETE		DRY		HOLES, RUTS, BUMPS, ETC.					
TWO		↓		LEVEL		BLACK TOP		WET		LOOSE MATERIAL ON SURFACE					
X X		X X		X X		X X		X X		X					
THREE OR MORE		↑ ↓		ON GRADE		BRICK		MUD		DEFECTIVE SHOULDER					
X X		X X		X X		X X		X X		X					
DIVIDED HIGHWAY		ON GRADE		GRAVEL		SNOW		NO DEFECTS		SHOWING X DARK ST. LIGHTS					
OTHER		OTHER		OTHER		OTHER		OTHER		OTHER X DARK NO ST. LIGHTS					
TRAFFIC CONTROL															
VEHICLE 1		VEHICLE 2		VEHICLE 3		VEHICLE 4		OTHER (EXPLAIN)							
STOP & GO SIGNAL		FLASHING LIGHT		WARNING SIGN		ONE WAY STREET									
NO TRAFFIC SIGNAL		OFFICER OR WATCHMAN		SOLID CENTER LINE		STOP SIGN									
X X															
VEHICLE NO. 1															
USA REGISTRATION OR LICENSE NO.		MAKE		YEAR		BODY TYPE		USA REGISTRATION OR LICENSE NO.		MAKE					
CRB 847 (AL)		CHEV		74		CAMARO 2 DOOR		69-7326 (GA)		MERCURY					
UNIT MARKINGS/DECAL NO.		☒ PRIVATELY OWNED		☐ GOVERNMENT				UNIT MARKINGS/DECAL NO.		☒ PRIVATELY OWNED					
BH 543 (RED)		☐ GOVERNMENT						CH 347 (GREEN)		☐ GOVERNMENT					
REGISTERED OWNER (IF NOT DRIVER) (LAST, FIRST, MI.)						REGISTERED OWNER (IF NOT DRIVER) (LAST, FIRST, MI.)									
PERCY, CLYDE F. 556						N/A									
ADDRESS OF OWNER						ADDRESS OF OWNER									
CO A, 360 INF, FT BLANK AL, 36201						COUNTY FARM SODCHOPPY GA 3901									
NAME AND ADDRESS OF INSURANCE COMPANY OR AGENT						NAME AND ADDRESS OF INSURANCE COMPANY OR AGENT									
ALL PLACE INS, BLANK CITY, AL, 36201						BROWN HARVEY G.									
NAME (LAST, FIRST, MI.) AND ADDRESS						NAME (LAST, FIRST, MI.) AND ADDRESS									
PERCY, HELEN R. (D/DAY)						4237 RED ROAD									
306 HARD ROAD						HALFWAY GA. 39055									
NORTH BLANK, AL. 36202															
DRIVER'S LICENSE/PERMIT NUMBER						DRIVER'S LICENSE/PERMIT NUMBER									
O-43861524						B-343-5373-7243									
STATE						STATE									
AL.						GA.									
LIMITATIONS ON LICENSE/PERMIT						LIMITATIONS ON LICENSE/PERMIT									
☒ YES (SPECIFY) CORR LENSES						☒ YES (SPECIFY) 20									
DRIVING EXPERIENCE (YEARS)						DRIVING EXPERIENCE (YEARS)									
3 MONTHS						20									
CODES (1) CAT F (2) INJ A (3) SEAT BELT A (4) POS 1						CODES (1) CAT E (2) INJ A (3) SEAT BELT 0 (4) POS 1									
OCCUPANTS															
NAME AND ADDRESS										VEH. NO.					
BROWN, SALLY S, SAME AS DRIVER #2										2					
										AGE					
										34					
										SEX					
										F					
										E					
										A					
										D					
										3					
NAME AND ADDRESS															
N/A															
PEDESTRIAN															
PEDESTRIAN WAS GOING: ☐ N ☐ S ☐ E ☐ W ALONG/CROSS/INTO (STREET, ROAD OR HIGHWAY):															
FROM (NW TO SW CORNER, OR EAST TO WEST SIDE, ETC.): TO:															
CROSSING WITH SIGNAL			CROSSING NO SIGNAL			STANDING ON ROADWAY			WALKING IN ROAD AGAINST TRAFFIC						
CROSSING AGAINST SIGNAL			HITCHING ON VEHICLE			COMING FROM BEHIND PARKED CAR			WALKING IN ROAD WITH TRAFFIC						
CROSSING NOT AT INTERSECTION			PLAYING ON ROADWAY			PUSHING OR WORKING ON VEHICLE			OTHER						
NAME AND ADDRESS										TELEPHONE NUMBER					
SMITH HARRY G, 504 274-38-4014										734-6410					
COB, 360 INF, FT. BLANK AL. 36201															
WITNESSES															
(1) CATEGORY				(2) INJURY CLASS				(3) SHOULDER/LAP BELTS				(4) SEAT POSITION			
A. ARMY OFFICER B. ARMY ENLISTED C. OTHER SERVICE OFFICER D. OTHER SERVICE ENLISTED E. CIVILIAN F. DEPENDENT G. OTHER				A. NO INJURY B. DEAD AT SCENE C. DEAD ON ARRIVAL D. DIED IN HOSPITAL E. NON-INCAPACITATING INJURY F. INCAPACITATING INJURY G. POSSIBLE INJURY H. INJURY UNKNOWN				A. LAP BELT USED B. SHOULDER HARNESS USED C. BOTH USED D. NOT USED E. NOT INSTALLED F. LAP BELT FAILED G. SHOULDER HARNESS FAILED H. BOTH FAILED I. UNKNOWN							

DA FORM 1 SEP 73 3946

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

DA Form 3946, Front





Guidance on release of information is contained in AR 340-17. Coordination with the local SJA should

be made prior to all releases of information from the forms.

## Block-by-Block Instructions

The figures on pages 70 and 71 show a properly completed DA Form 3946 (front and back). In the following instructions, each block is shown

separately and followed by a description of how to make the proper entry.

<b>MILITARY POLICE TRAFFIC ACCIDENT REPORT</b> <small>For use of this form see AR 190-45. the proponent agency is Office of The Provost Marshal General.</small>					PM ACTIVITY CODE/REPORT NO.		
DATE OF ACCIDENT			TIME (USE 2400 HOUR)	DAY OF COLLISION	<input type="checkbox"/> SUNDAY	<input checked="" type="checkbox"/> MONDAY	<input type="checkbox"/> TUESDAY
YR 77	MO 04	DAY 30	2315 HRS	<input type="checkbox"/> WEDNESDAY	<input type="checkbox"/> THURSDAY	<input type="checkbox"/> FRIDAY	<input type="checkbox"/> SATURDAY

Insert the MPR number, CID ROI number (if applicable) and any other report number prescribed by local PM SOP. If these numbers are not known, leave this space blank.

Enter time in hours and minutes at which the accident occurred. Use military time (such as 2350 hours). Time of accident means actual moment of the accident, not the time the accident was reported and not the time the investigation began.

Enter year, month, and day on which accident occurred. For example, 30 Apr 1977 would be entered, "77 04 30."

Mark an "X" in the box to the left of the day of the week accident occurred.

## Location

LOCATION	MILITARY RESERVATION <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF		ROAD OR STREET OR WHICH ACCIDENT OCCURRED <i>THOMAS ST.</i>		NAME AND LOCATION OF MILITARY RESERVATION, CITY, STATE, ETC. <i>FT. BLANK, AL 36201</i>		
	AT INTER-SECTION	NAME OF INTERSECTING STREET <i>N/A</i>	NOT AT INTER-SECTION	NAME OF NEAREST INTERSECTING ST., HIGHWAY, OR OTHER PERMANENT IDENTIFYING LANDMARK <i>38TH ST.</i>	NO. OF FEET <i>25</i>	DIRECTION <i>W</i>	
	IF ACCIDENT OCCURRED OFF MILITARY RESERVATION AND OUTSIDE CITY LIMITS INDICATE _____ MILES <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W FROM <input type="checkbox"/> CITY LIMITS <input type="checkbox"/> CENTER OF CITY OR TOWN				KIND OF LOCALITY <input type="checkbox"/> OPEN COUNTRY <input checked="" type="checkbox"/> TROOP BILLETTS <input type="checkbox"/> RESIDENTIAL <input type="checkbox"/> MFG OR INDUST <input type="checkbox"/> SCHOOL OR PLAYGROUND <input type="checkbox"/> BUSINESS <input type="checkbox"/> OTHER		

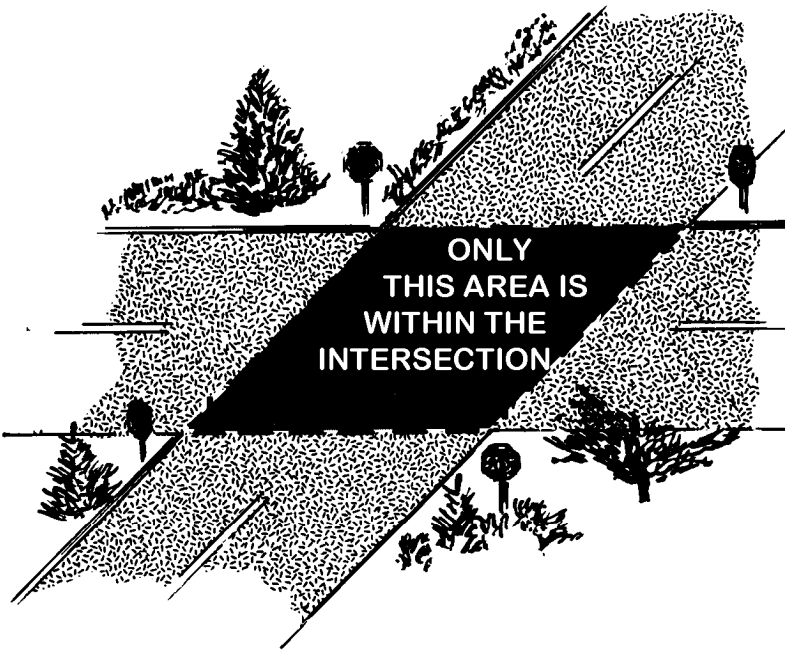
Indicate with an "X" whether the accident occurred on or off a military reservation.

state/district, and name of country. If the accident occurred off a military reservation and outside a city, enter the word "outside," then the name of the nearest installation or city. Next, enter the word "in," and note the county, district, state and country (if not in US) in which the accident occurred. For example, "outside Anniston, AL, in Calhoun County, AL."

**Enter the route number and/or name of the highway or street, road, alley, etc., on which the accident occurred. Use official name rather than some nickname.**

If accident occurred on a military reservation or in a city, enter the name of the reservation or city and state. If outside US, enter name of reservation,

If accident occurred within an intersection, enter the name and/or route number of the intersecting highway, street, road, alley, etc. If the accident



area within imaginary lines drawn from the edges of the intersecting roads on through the intersection.

If the accident did not occur in an intersection or on an entrance/exit ramp, enter the nearest intersecting street or landmark. Then enter in feet the distance between the center line of the nearest intersecting street and the location of the key event of the accident. Direction is the compass direction from the intersection or landmark to the location of the accident.

Enter the approximate miles from the nearest military installation or city (identified previously) if the accident did not occur within either. "City or Town" also refers to a military reservation, if that is what has been entered in the name and location block. If kilometers are used, strike out "Miles" and enter "Km." Again, the direction is from the installation or city to the scene of the accident.

occurred at the intersection of a highway with an entrance or exit ramp, this ramp must be accurately identified by name and/or number to permit follow-up engineering and enforcement action. If the accident occurred at the intersection of a road and a railroad, identify the railroad crossing number. "Within an intersection," means that

Mark an "X" in the box or boxes that best describe the area in which the accident occurred. If none of those listed is appropriate, check "Other" and briefly describe in the space after it.

## Type Accident

TYPE ACCIDENT	TYPE ACCIDENT					TOTAL NO. OF VEHICLES INVOLVED <b>2</b>	SEVERITY	
	<input checked="" type="checkbox"/> VEHICLE-VEHICLE	<input type="checkbox"/> VEHICLE-PEDICYCLE	<input type="checkbox"/> STOLEN VEHICLE	<input type="checkbox"/> OTHER	<input type="checkbox"/> NO. KILLED		<input type="checkbox"/> NO. INJURED	
	<input type="checkbox"/> VEHICLE-OBJECT	<input type="checkbox"/> VEHICLE-RR TRAIN	<input type="checkbox"/> SINGLE VEHICLE (NON COLLISION)		<input checked="" type="checkbox"/> PROPERTY DAMAGE ONLY			
	<input type="checkbox"/> VEHICLE-PEDESTRIAN	<input type="checkbox"/> HIT & RUN						

Mark (X) the box or boxes which best describe the incident. If a vehicle hit both an object and a pedestrian, mark only the box indicating the first impact. If "Other" is marked, explain in the space provided (for example, "Vehicle-Animal").

Enter the total number of vehicles involved in the accident. If more than two vehicles are involved, additional copies of DA Form 3946 must be used.

Indicate the number of people killed and the number injured in the appropriate blocks. Disposition of killed and injured personnel will be explained in the "Description of Collision" block in Part B of the form. Mark an "X" in "Property Damage Only" block if there were no human fatalities or injuries. If any person claims an injury, it will be recorded as an injury even though the person does not appear to be injured.



Enter the last two digits of the vehicle's model year, such as "57," "69," "73," etc.

Describe the model and style of the vehicle (for example: "Malibu, 2-door;" "Continental convertible," etc.). For common military vehicles, use "common" tonnage descriptions (for example: "1/4-ton truck," "2 1/2-ton truck," etc.).

Enter unit bumper markings if it is a tactical military vehicle. If the military vehicle is nontactical (commercial) enter the license plate number. If privately owned, enter decal number and color, if appropriate. Example: "AB430 (blue)."

Mark an "X" for privately owned or Government-owned.

If the registered owner is the driver, enter "NA." If

the owner is not the driver, enter owner's last name, first name, middle initial. If owner is military, also include rank and SSN (Social Security Number). If owner is a civilian, include SSN. If it is a Government-owned vehicle, enter "US Government."

Enter military address (unit or dispatching motor pool, station or location, state or district, and country if not US) if the owner is military; use current mailing address of owner if civilian. Be sure to include zip code on all US addresses.

Enter name of insurance company or agent. If a company, the city and state will normally be all the address needed. If a private agent is given, list the complete address of the agent. No effort will be made to ascertain the limits of insurance of any of the parties.

### Driver Information

DRIVER NO. 1	NAME (LAST, FIRST, M.I.) AND ADDRESS <i>PERCY, HELEN R. (D/DAY) 306 HARD ROAD NORTH BLANK, AL. 36202</i>		SSN <i>405-13-7701</i>		DRIVER NO. 2	NAME (LAST, FIRST, M.I.) AND ADDRESS <i>BROWN HARVEY G. 4237 RED ROAD HALFWAY GA. 39055</i>		SSN <i>262-92-1192</i>	
	DRIVER'S LICENSE/PERMIT NUMBER <i>0-43861524</i>		STATE <i>AL.</i>			DRIVER'S LICENSE/PERMIT NUMBER <i>B-343-5373-7243</i>		STATE <i>GA.</i>	
	LIMITATIONS ON LICENSE/PERMIT <input checked="" type="checkbox"/> YES (SPECIFY) <i>CORR LENSES</i> <input type="checkbox"/> NO		DRIVING EXPERIENCE (YEARS) <i>3 MONTHS</i>			LIMITATIONS ON LICENSE/PERMIT <input type="checkbox"/> YES (SPECIFY) <input checked="" type="checkbox"/> NO		DRIVING EXPERIENCE (YEARS) <i>20</i>	
	CODES (1) CAT <i>F</i> (2) INJ <i>A</i> (3) SEAT BELT <i>A</i> (4) SEAT POS. <i>1</i>					CODES (1) CAT <i>E</i> (2) INJ <i>A</i> (3) SEAT BELT <i>0</i> (4) SEAT POS. <i>1</i>			
	AGE <i>18</i>		SEX <input type="checkbox"/> MALE <input checked="" type="checkbox"/> FEMALE			AGE <i>36</i>		SEX <input checked="" type="checkbox"/> MALE <input type="checkbox"/> FEMALE	

If there was no driver in the vehicle at the time of the accident, enter "No driver" in name block. If the driver is a service member, enter last name, first name, middle initial, rank, and his military address (unit, station, state, zip code). If the driver is a dependent, enter last name, first name, middle initial, dependency status and abbreviated unit of sponsor (such as "d/wife of CPT Harry B. Smith, 3/19 Arty"). A dependent's local mailing address should also be entered here (including zip code). For civilians, list last name, first name, and middle initial. Enter a married woman's name as: "Jones, Mary E.," not "Mrs. Dave Jones."

Enter SSN for all US personnel. If foreign, use military identification number or appropriate civilian identification number. If no number is available or known, enter "UNK."

Enter age in years.

Place an "X" in appropriate block, "Male" or "Female."

If the driver is military and driving a military vehicle, enter the driver's military license number and the station where issued (such as: "USA-383-70, Fort McClellan, AL"). In the case of military personnel driving military vehicles and having military licenses, enter "US Government" in the block for "State." For civilians, including dependents, enter the operator's license number and issuing state. If an international license, note "Inter" in the block for "State."

If limitations or restrictions are stated on license of driver, mark an "X" in "Yes" block and specify. Examples are "glasses," "Day-time only," etc. If a

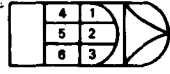
military driver is operating a vehicle for which he is not qualified as indicated on his license, this is not to be entered here but should be noted on an appropriate citation and in the "Description of Collision" block. If no limitations are noted on the driver's license, put an "X" in the "No" block.

Enter the operator's driving experience in years. For drivers with less than one year of experience,

cross out the word "years," add "months," and make the appropriate entry. Unless it is clearly unreasonable, the driver's word should be accepted for this information.

The numbers referring to "codes" are red on the form. These red numbers refer to the red numbers at the bottom of the page. Enter only the appropriate letter or number.

## Codes

CODES	(1) CATEGORY	(2) INJURY CLASS	(3) SHOULDER/LAP BELTS	(4) SEAT POSITION
	A. ARMY OFFICER B. ARMY ENLISTED C. OTHER SERVICE OFFICER D. OTHER SERVICE ENLISTED E. CIVILIAN F. DEPENDENT G. OTHER	A. NO INJURY B. DEAD AT SCENE C. DEAD ON ARRIVAL D. DIED IN HOSPITAL E. INCAPACITATING INJURY F. NON-INCAP (EVIDENT) INJURY G. POSSIBLE INJURY H. INJURY UNKNOWN	A. LAP BELT USED B. SHOULDER HARNESS USED C. BOTH USED D. NOT USED E. NOT INSTALLED F. LAP BELT FAILED G. SHOULDER HARNESS FAILED H. BOTH FAILED U. UNKNOWN	 7. OTHER POSITION (BUS-MOTORCYCLE) 8. POSITION UNKNOWN

### Category

**A. Army Officer**— commissioned or warrant Army officer on active duty. Included are reservists and national guard personnel on active duty for training (ADT) status.

**B. Army Enlisted**— enlisted Army personnel on active duty. Included are reservists and national guard personnel on ADT status.

**C. Other Service Officer**— US Navy, Marine, Air Force, and Coast Guard, commissioned and warrant officers. Included are reservists and national guard personnel on ADT status.

**D. Other Service Enlisted**— US Navy, Marine, Air Force, and Coast Guard enlisted personnel. Included are reservists and national guard personnel on ADT status.

**E. Civilian**— all US civilians, including DA civilian employees.

**F. Dependent**— dependents of all US service personnel.

**G. Other**— foreign nationals (both military and civilian) should be included here.

### Injury Class

**A. No Injury**— entered when there are no apparent or claimed injuries on the part of the individual concerned.

**B. Dead at Scene**— entered when competent medical authority has pronounced individual dead at the scene.

**C. Dead on Arrival**— individual pronounced dead upon arrival at hospital or medical facility.

**D. Died in Hospital**— individual alive upon arrival, but died while in hospital or medical facility.

**E. Incapacitating Injury**— any injury that prevents the injured person from walking, driving, or normally continuing other activities. Includes severe lacerations, broken or distorted limbs, unconsciousness, etc. This does not include momentary unconsciousness, broken fingers and toes, simple complaint of pain, etc.

**F. Non-Incap (Evident) Injury**— any injury other than fatal or incapacitating. Includes broken fingers or toes, abrasions, etc. This does not include limping, complaint of pain, nausea, momentary unconsciousness, etc.

**G. Possible Injury**— any injury reported by the police or claimed by the individual, such as momentary unconsciousness, claim of injuries not evident, limping, complaint of pain, nausea, hysteria, whiplash, etc.

**H. Injury Unknown**— applies when it is not possible to objectively determine, at the time of the accident, whether there is no injury (Code A) or possible injury (Code G).

## Shoulder/Lap Belts

**A. Lap Belt Used**— make this determination based on what is observed at the scene and what is told to you. If told the belt or belts were in use and there is evidence to the contrary, further inquiry may be necessary, or “Unknown” code may have to be used.

**B. Shoulder Harness Used**— use the same guidance as with lap belt.

**C. Both Used**— enter if both lap and shoulder harness were in use at the time of the accident.

**D. Not Used**— enter if neither lap belt nor shoulder harness were in use at the time of the accident, but were installed in this seat position.

**E. Not Installed**— enter if neither lap belt nor shoulder harness are installed in this position in the vehicle.

**F. Lap Belt Failed**— applies only when the belt was in use and failed at the time of the accident. Thus, if a belt was used at the time of the accident, but failed, the appropriate code would be “F,” not “A.” Belt failure may consist of torn webbing, seat belt anchorage assembly torn from vehicle structure, bolt sheared off, buckle broken, and so forth.

**G. Shoulder Harness Failed**— same guidance as with lap belt failures.

**H. Both Failed**— lap belt and shoulder harness were both in use and both failed.

**U. Unknown**— evidence as to use of belts is nonexistent, contradictory, or inconclusive. Investigator has no way of knowing if belts were in use.

## Seat Position

Enter the seat position code that best describes the individual’s position in the vehicle before the accident. If more than one person is occupying a seat position (such as child on the lap of a passenger), use the same code twice or as required and explain in the “Description of Collision” block.

1. Front left seat (normally operator’s position).
2. Front center seat.
3. Front right seat.
4. Rear left seat.
5. Rear center seat.
6. Rear right seat.
7. Other Position (Bus-Motorcycle—If codes 1 through 6 cannot be used for identifying the seat position of individuals in vehicles such as commercial and school buses, trucks, motorcycles, station wagons, side or rear facing seats etc., enter a “7” for “Other Position.”)
8. Position Unknown—If the seat position cannot be determined, enter an “8” for “Position Unknown.”

## Occupants

OCCUPANTS	NAME AND ADDRESS	VEH. NO.	CODES →		CATE-GORY (1)	IN-JURY (2)	SEAT BELT (3)	SEAT POSI-TION (4)
			AGE	SEX				
	BROWN, SALLY S, SAME AS DRIVER #2	2	34	F	E	A	D	3

Information here does not include drivers. For military occupants, list last name, first name, middle initial, rank and SSN. Military unit addresses should be used for all military personnel. If the individual is a dependent, enter last name, first name, middle initial, SSN, dependency status and abbreviated unit of sponsor (such as "d/son of SP4 Joe E. Jones, 385th Trans"). Local mailing addresses should be used for dependents. For civilians enter last name, first name, middle initial and SSN. Enter a married woman's name as "Johnson, Beverly S.," not "Mrs. James Johnson."

Enter the number to indicate which vehicle the occupant was in. If more than two vehicles were

involved, the numbering should continue on additional forms. Try to list the occupants on the same form the driver and vehicle in which the person was riding is on. For example, occupants in Vehicle 3 should be listed on the same additional form as the driver and vehicle description of Vehicle 3.

Enter the age of each individual.

Enter "M" or "F" for each individual listed.

Fill in the appropriate code as detailed on pages 76 and 77.

## Pedestrians

PEDESTRIAN	NAME AND ADDRESS <i>N/A</i>							
	PEDESTRIAN WAS GOING: <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W ALONG/ACROSS/INTO (STREET, ROAD OR HIGHWAY): _____							
	FROM (NW TO SW CORNER, OR EAST TO WEST SIDE, ETC): _____ TO: _____							
	CROSSING WITH SIGNAL		CROSSING NO SIGNAL		STANDING ON ROADWAY		WALKING IN ROAD AGAINST TRAFFIC	
	CROSSING AGAINST SIGNAL		HITCHING ON VEHICLE		COMING FROM BEHIND PARKED CAR		WALKING IN ROAD WITH TRAFFIC	
CROSSING NOT AT INTERSECTION		PLAYING ON ROADWAY		PUSHING OR WORKING ON VEHICLE		OTHER		

Enter the name and address of any pedestrian involved in the accident. Enter the information in the same manner that "Occupants" were entered in the preceding paragraph. Also, enter the appropriate code for age, sex, category, and injury, as explained on pages 76 and 77.

Complete in a manner that best describes exactly what the pedestrian was doing at the time of the accident. Strike out inappropriate words or enter words that are more appropriate.

For example, see figure below. If the pedestrian

was merely standing and not in motion at the time of the accident, strike out "going" on the form and write in where he was standing in the spaces provided. For example, "standing on NW corner of 8th & K Street."

Mark "X" in the appropriate blocks. More than one condition may apply. Again, the blocks are to the left of the conditions.

### Witnesses

WITNESSES	NAME AND ADDRESS	TELEPHONE NUMBER
	SMITH HARRY Q, SP4, 274-38-4014 CO B, 3/60 INF, FT. BLANK AL. 36201	734-6410

Enter names and addresses of witnesses in the same manner as occupants were entered (page 78).

Enter telephone numbers for all witnesses.

### Vehicle and Other Property Damage

VEHICLE DAMAGE INSTRUCTIONS		EXAMPLE	
1. In each box, circle the number of each damaged area. 2. Shade area of severest impact. 3. Draw arrow(s) to show principal direction of force.			
<b>DAMAGED VEHICLE NO. 1</b> 		<b>DAMAGED VEHICLE NO. 2</b> 	
<b>SEVERITY OF DAMAGE: VEHICLE NO. 1</b> <input checked="" type="checkbox"/> DISABLING DAMAGE <input type="checkbox"/> OTHER M.V. DAMAGE <input type="checkbox"/> FUNCTIONAL DAMAGE <input type="checkbox"/> NO DAMAGE		<b>SEVERITY OF DAMAGE: VEHICLE NO. 2</b> <input type="checkbox"/> DISABLING DAMAGE <input type="checkbox"/> OTHER M.V. DAMAGE <input checked="" type="checkbox"/> FUNCTIONAL DAMAGE <input type="checkbox"/> NO DAMAGE	
<b>TOWED BY</b> WILSON WRECKING		<b>TOWED BY</b> RELEASED TO	
<b>TO</b>		<b>TO</b> OPERATOR	
<b>DAMAGE TO PROPERTY (OTHER THAN VEHICLE)</b>			

Making dollar estimates of damage can be a difficult and confusing task. Therefore, **no dollar damage estimates will be made on this form.**

the number of each damaged area. More than one number may be circled. Be sure to also circle numbers 13-17 if they apply.

The damage marking on these diagrams is not expected to be a technical masterpiece. Rather, it is required to give the reviewer a basic idea of where the damage occurred on each vehicle.

Shade in the area of severest impact. Areas suffering "contact" (collision or direct) damage should be shaded, and the appropriate number should be circled. Areas suffering just induced or indirect damage should be indicated by circling the representing number, not by shading.

In each box referring to a damaged vehicle, circle



Draw an arrow showing the principal direction of force. There should be one arrow for each spot on the car where a contact occurred. In most cases, there will be only one arrow per vehicle. When the vehicle was involved in more than one collision, such as when a car is struck by another car and forced into a third car, there should be an arrow for each point of contact.

For each damaged vehicle, mark an “X” in the appropriate box to indicate severity of damage. The classifications are defined as follows:

**Disabling damage**—The vehicle is damaged so badly that it cannot be driven from the scene.

**Functional damage**—The vehicle can still be driven, but it has been damaged enough to impair its operation or the functioning of one or more of its components.

**Other motor vehicle damage**—The vehicle is in no way disabled or functionally impaired. Damage does not interfere with normal operation of the vehicle. This category includes such damage as dents in fenders, broken trim, etc.

**No damage**—The vehicle was involved but damaged in no way. An example of this might be a pedestrian collision in which the vehicle itself was not harmed.

If the vehicle was towed away, write in the name of the towing or wrecker service that removed it. Local wrecker companies will normally be familiar, so it will not usually be necessary to include an address. If the vehicle is towed away by a military wrecker, simply enter “military wrecker.” Also, identify the destination of the towed vehicle. For example, if a vehicle was towed by Acme Auto Repair to their garage in Anniston, AL, this section would appear as: “Acme Garage, Anniston, AL.” If the vehicle is not towed away, list what its disposition was in this space (“released to operator”).

If a bus, motorcycle, trailer, or other nonautomobile type vehicle is involved and damaged, use the space available for sketching the type of vehicle. As in the other damage sections discussed above, shade in the areas receiving the severest damage and use arrows to indicate the direction of force at collision points.

Enter a description of damage to property other than vehicles. Make this description as concise as possible without leaving out important facts. Try to restrict description to the space allotted. In cases of severe damage to high value items (such as 2½-ton truck hitting a parked helicopter at high speed), supporting descriptions of damage should be attached in the form of statements and/or estimates of repair cost.

## Sketch of Collision

*SKETCH OF COLLISION	
<p><b>1. Identify:</b>            Roadway &amp; roadway features            Vehicles            Pedestrians            Objects on/off roadway            Traffic controls            Skidmarks            Unusual/temperature conditions            (Ice patch, construction areas, etc.)</p> <p><b>2. Locate probable point of impact</b></p> <p><b>3. Show vehicle, pedestrian or object positions at impact</b></p> <p><b>4. Show probable vehicle or pedestrian paths before and after collision</b></p>	

“A picture is worth a thousand words.”

A detailed diagram of a big, complex accident is not going to fit in the space allotted for a diagram. Most of our accidents, however, are relatively minor and simple. The space on the form should be sufficient for most of these minor accidents. Serious accidents will require more thorough diagrams on separate sheets.

Depending on the severity of the accident, the following items should be noted on the diagram (the simpler the accident, the fewer items needed):

Draw arrow indicating north in the circle at upper right.

Include and identify:

- Roadway layout.

- Vehicles.
- Pedestrians.
- Objects on or off the roadway.
- Traffic controls.
- Skidmarks.
- Unusual or temporary conditions (ice patch, stones, gravel, etc.).

Locate probable point of impact.

Show positions of vehicles, pedestrians, or objects at point of impact.

Show probable vehicle and pedestrian paths before and after the collision.

Use broken lines to indicate probable paths followed before the collision or point of impact. Use solid lines to indicate paths followed after the collision or point of impact.

## Description of Collision

DESCRIPTION OF COLLISION	Indicate what probably happened before, during and after the crash, include information not on sketch, e.g., driver disability, reduced visibility, pedestrian clothing color, construction or repair work, etc.
<p>VEHICLE 2 (BROWN) WAS STOPPED AT THE STOP SIGN WAITING TO CROSS 38<sup>TH</sup> ST. VEHICLE 1 (PERCY) APPROACHED FROM THE REAR AND WAS UNABLE TO STOP WHEN SHE APPLIED THE BRAKES. THERE WERE SKID MARKS (APPROX. 20') ON THE WET PAVEMENT. VISIBILITY WAS APPROXIMATELY 100-150 FT.</p>	

This form contains a significant amount of information in many places. It is not necessary to repeat all of this information in this block. As with the sketch block, the space provided here for description will be sufficient for most accidents. Only in the most serious accidents will it be necessary to use a continuation sheet. Indicate here what probably happened before, during and after the collision. Include information not on diagram or not on other parts of the form. Describe special conditions or events associated with the collision such as vehicle(s) on fire, immersed or submerged, roadway lights not operating, operator restrictions, color (shade) of clothing of

pedestrians, disposition of injured personnel (“transported to Haines Army Hospital”), etc.

This description should be based on the best judgment of the investigator, supported by the evidence available.

Only the last names of persons identified elsewhere in the report need be used in this block; these last names will be printed or typed in all capitals. In only the most serious, complicated accidents should it be necessary to continue on an additional sheet.

## Driver’s Action Before Accident

DRIVER'S ACTION BEFORE ACCIDENT	DIRECTION HEADED				DRIVER 1	CHECK ONE OR MORE	DRIVER 2	CHECK ONE OR MORE	VEHICLE		SPECIFY FEET/MPH	
	N	S	E	W					1	2		
VEH 1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BACKING		OVERTAKING OR PASSING	150	N/A		ESTIMATED DISTANCE WHEN DANGER WAS FIRST NOTICED (FEET)
						GOING STRAIGHT AHEAD		AVOIDING VEH/OBJ	30	N/A		ESTIMATED SPEED WHEN DANGER WAS FIRST NOTICED (MPH)
VEH 2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	MAKING LEFT TURN	<input checked="" type="checkbox"/>	SLOWING OR STOPPING	15	0		ESTIMATED SPEED AT IMPACT (MPH)
						SKIDDING		STOP IN TRAFFIC LANE	30	35		DISTANCE TRAVELED AFTER IMPACT (FEET)
						MAKING RIGHT TURN		OTHER (SPECIFY)				LAWFUL SPEED (MPH)
						MAKING "U" TURN			20	20		

Mark an “X” in the block to indicate direction each vehicle was traveling immediately prior to the accident.

Use “X” to indicate one or more of the actions the drivers of the respective vehicles were executing immediately prior to the accident. The blocks to be marked are to the left of the descriptions. In the

case of parked vehicles, mark in “Other” block and enter “parked vehicle” in the space provided.

Enter the best estimate possible for each of the items listed. If the item is not applicable to the accident being reported, enter “NA” in the block. If it is impossible to make a reasonable estimate, enter “UNK.”

## Contributing Circumstances

CONTRIBUTING CIRCUMSTANCES	DRIVER 1	DRIVER 2	DRIVER 1	DRIVER 2	DRIVER 1	DRIVER 2	DRIVER 1	DRIVER 2	DRIVER 1	DRIVER 2	VEHICLE 1	VEHICLE 2	
	CHECK ONE OR MORE		CHECK ONE OR MORE		CHECK ONE OR MORE		CHECK ONE		CHECK ONE OR MORE		CHECK ONE OR MORE		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EXCEEDING SPEED LIMIT	<input type="checkbox"/>	<input type="checkbox"/>	NO OR IMPROPER SIGNAL	<input type="checkbox"/>	<input type="checkbox"/>	ALCOHOL INVOLVED	<input type="checkbox"/>	<input type="checkbox"/>	CHEMICAL TEST GIVEN	<input type="checkbox"/>	DEFECTIVE BRAKES
<input checked="" type="checkbox"/>	<input type="checkbox"/>	SPEED EXCESSIVE FOR CONDITIONS	<input type="checkbox"/>	<input type="checkbox"/>	DISREGARDED TRAFFIC SIGNAL	<input type="checkbox"/>	<input type="checkbox"/>	DRUGS INVOLVED	<input type="checkbox"/>	<input type="checkbox"/>	CHEMICAL TEST REFUSED	<input type="checkbox"/>	DEFECTIVE HEAD LIGHTS
<input type="checkbox"/>	<input type="checkbox"/>	FAILED TO YIELD	<input type="checkbox"/>	<input type="checkbox"/>	IMPROPER TURN	<input type="checkbox"/>	<input type="checkbox"/>	ABILITY IMPAIRED	TEST RESULTS		<input type="checkbox"/>	<input type="checkbox"/>	DEFECTIVE REAR LIGHTS
<input type="checkbox"/>	<input type="checkbox"/>	DISREGARDED STOP SIGNAL	<input type="checkbox"/>	<input type="checkbox"/>	UNKNOWN	<input type="checkbox"/>	<input type="checkbox"/>	ABILITY NOT IMPAIRED	DRIVER NO. 1	DRIVER NO. 2	<input type="checkbox"/>	<input type="checkbox"/>	TIRES WORN OR SMOOTH
<input type="checkbox"/>	<input type="checkbox"/>	VISION OBSTRUCTED	<input type="checkbox"/>	<input type="checkbox"/>	OTHER (SPECIFY)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	UNKNOWN	% BAC	% BAC	<input type="checkbox"/>	<input type="checkbox"/>	TIRES PUNCTURED OR BLOWN
<input type="checkbox"/>	<input type="checkbox"/>	FOLLOWING TOO CLOSE	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OTHER (SPECIFY)
<input type="checkbox"/>	<input type="checkbox"/>	IMPROPER OVERTAKING	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NONE
SEE ATTACHED DD FORM 1920 "ALCOHOLIC INFLUENCE REPORT"											<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Mark "X" in appropriate blocks for drivers and vehicles. More than one block per vehicle may be marked. The blocks to be marked are to the left of the descriptions.

Any time alcohol appears to be involved, a DD Form 1920, Alcoholic Influence Report

must be completed and attached to the form. "Drugs Involved" may be marked only when this determination has been made by medical authorities. If pedestrian action contributed to the accident, such as disregarding a traffic signal or being under the influence of alcohol, it should be noted in the "Description of Collision" block.

## Military Police Activity

MILITARY POLICE ACTIVITY	NAME OF PERSON(S) APPREHENDED		CHARGES		REPORT NUMBER
				SPEED EXCESSIVE FOR CONDITIONS	
	TIME MILITARY POLICE NOTIFIED (HOUR):	2321 HRS	TIME MILITARY POLICE ARRIVED AT SCENE OF ACCIDENT (HOUR):	2327 HRS	
	WHERE ELSE WAS INVESTIGATION MADE	N/A	DID MILITARY OPERATOR COMPLETE DD FORM 518, "ACCIDENT IDENTIFICATION CARD"	N/A	YES NO
	IF OFF MILITARY RESERVATION, WHO ELSE CONDUCTED AN INVESTIGATION (IF OTHER AGENCY CONDUCTED COMPLETE INVESTIGATION, SO INDICATE)	N/A	DID MILITARY OPERATOR COMPLETE STANDARD FORM 91 "OPERATOR'S REPORT OF MOTOR VEHICLE ACCIDENT"	N/A	
			WAS FORM COMPLETED FROM ON SCENE INVESTIGATION (IF NOT EXPLAIN)		X
	DATE	30 APR 76	TYPED OR PRINTED NAME AND GRADE OF INVESTIGATOR	ALICE G. JONES, PFC	
			INVESTIGATOR'S SIGNATURE AND GRADE	Alice G. Jones, PFC	
	DATE APPROVED	30 APR 76	APPROVED BY	INCLOSURES	DISTRIBUTION
			MAJ. MPC PROVOST MARSHAL	STATEMENTS ④	D

Enter last name, first name, and middle initial of all personnel charged with any offense in connection with the accident. If their names do not appear elsewhere on this form, enter all information required in the "Name and Address" portion under the heading "Occupants" discussed earlier in this field manual.

List charges for each individual charged. For example, if one driver was charged with going 50

mph in a 35 mph zone, this entry would read "speeding, 50/35."

List report number for each person charged. If cited on a DA Form 3975, this will normally be the same MPR number that appears at the top of this form. If the individuals are cited on DD Form 1805 or DD Form 1408, enter the sequential number of the form in this block.

Enter time the Military Police were first notified (whether first notification was made to the desk or directly to a patrol). Entry will be in military time.

Enter the time the first Military Police personnel arrived at the scene of the accident. Again, it will be in military time. Should on-duty MPs be involved in the accident, local policy will determine the need for a separate investigative unit.

Enter the location of places other than the accident scene or the provost marshal's office where statements were taken or the investigation was continued. For instance, "El Paso, TX, PD;" or, "Johnson Army Hospital."

Enter the names of other agencies participating in the investigation. If another agency did the entire investigation and the information on the form is based on that report, state, "All information supplied by Anniston, AL, PD," or whomever. When another agency conducted most of the investigation, attach a copy of that agency's report.

Operators of military vehicles are required to exchange completed DD Forms 518. Mark an "X" to indicate whether or not these forms were exchanged. Forms need not be exchanged when only privately owned vehicles are involved.

Military operators of military vehicles are also required to complete Standard Form 91. Mark an "X" to indicate if the forms were completed. The Standard Form 91 is to be turned into the operator's unit by the operator; it is not to be taken by the Military Police.

Place an "X" to indicate if this DA Form 3946 was completed from an investigation at the scene of the accident. If it was not, explain why. Example: "completed from witness reports-scene under hostile fire," etc.

Enter the date this form is completed and signed by the investigator.

Enter the name of the person who actually observed the accident scene and supplied the information for completion of this form. If more than one person assisted, enter the name of the senior investigator. List additional investigators on the DA Form 3975 that will accompany this form in distribution.

The signature of the person whose name appears in the preceding block, and grade, if applicable, is entered here.

The final "approval" line should be completed as required by local policy.



## Vehicle Marks As Trace Evidence

Every traffic accident leaves some physical signs of what occurred. By studying, recording and photographing these signs, the investigator will have valuable information with which to supplement witness statements and his conclusions. Vehicle trace evidence includes debris, damage, tiremarks, scratches and gouges. All of this combined will establish the accident's chain of events.

### Debris, Damage, Scratches and Gouges

#### Debris

Vehicle debris is detached material from a vehicle.

It results. when the vehicle strikes or is struck by something else. The primary use of vehicle debris is to determine the point of impact. In hit-and-run cases, vehicle debris can be used to help identify the suspect vehicle and help determine the vehicle's direction and actions after the impact.

Types of vehicle debris are:

- Underbody debris, such as rust, dirt, mud.
- Parts of the vehicle, such as chrome, glass, paint marks.
- Vehicle fluids, such as water, gas, oil.
- Cargo, either solid or fluid.
- Road materials, such as dirt, tar, asphalt.
- Body fluid from victims, such as blood.
- Clothing from victims.

## Damage

Damage includes, that occurring to the vehicles and to the roadway or fixed objects along the roadway. Damage can provide information concerning the chain of events, color of vehicles, damaged areas on vehicles, and may indicate the final resting position of vehicles. Vehicle damage may be either contact or induced, as discussed in Chapter 9.

## Scratches and Gouges

These are marks made into the roadway by parts of the vehicle. They assist in determining the speed of the vehicle and the chain of events.

## Tire Marks

Tire marks are the marks left at the scene of an accident by the vehicles involved. They are caused by rotating or sliding tires. The table below shows the types of marks.

### TIRE MARKS

#### Rotating Tires

Prints  
Imprints  
Splatter Marks

#### Sliding Tires

Skid Marks  
Yaw Marks  
Scuff Marks

Tire marks are the prime means of estimating minimum speed of vehicles, and the path of vehicles before, during and after impact.

## Rotating Tires

**Prints**— Tires leave prints on a road surface after rolling through a wet substance. This print will reveal the tire tread pattern, cuts, bald spots, etc.

**Imprints**— Tires rolling through soft materials such as mud, dirt or sand leave imprints.

**Scuff Marks**— Scuff marks are left on the road by tires that are sliding or scrubbing while the wheel is still turning. There are several types of scuffs.

These are:

**Decelerating scuffs**— These occur at the beginning of skidmarks after the brake has been applied enough to slow the wheels so they drag, but before the wheels are locked.

**Side scuffs**— These marks are left by a tire sliding sideways, without braking. Close striations are a characteristic of side scuffs. The striations are narrow, parallel, light grooves, scratches or stripes.

**Combination scuffs**— These are combinations of sliding with decelerating or side scuffs. They can be caused by a vehicle braking and steering at the same time, or steering and applying power at the same time.

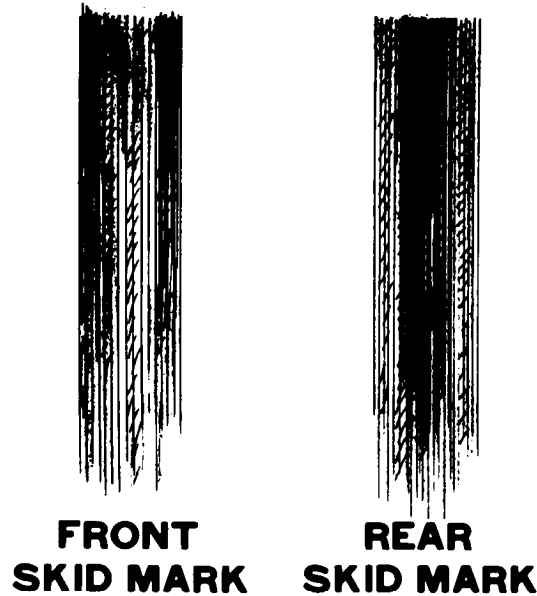
**Flat tire scuffs**— These are marks left on the road by the edges of an under inflated or greatly overloaded tire. There are two distinct marks for each tire, leaving a flat tire scuff.

## Sliding Tires

When a wheel is not rotating and the vehicle is in motion, the tire is sliding. There are five types of marks left by a sliding tire. These are skidmarks, yaw marks, a combination of skid and yaw marks, skip skids and gap skids.

**Skid marks**— These marks can appear as a straight or broken line. They occur when brakes are locked and the vehicle continues moving in the original direction. There is a distinct difference between front tire and rear tire skid marks. Front tire marks appear dark on the outer edges and light in the center; while rear tire marks are darker in the center and light on the outside edge.

**Yaw marks**— These are caused by a turning movement in the tires while the vehicle is still traveling in the same general direction. They are normally wider than skid or scuff marks. However, they may be narrower when just the edge of a tire is in contact with the road surface.



**Combination marks**—Sliding tires can show a combination of skid and yaw marks. As with all sliding marks, there is a lack of signs of steering and tread pattern.

**Skip skidmarks** are caused when a braking wheel jumps over a rut, bump or hole. They may also be left by rear wheels which are jumping on the springs. Skips are usually one or two feet (.4 to .5 meters) long, but may be longer if the vehicle was traveling at a high rate of speed.

## Skips and Gap Skids

**Gap skidmarks** are caused when the pressure on the brakes is released. When pressure is reapplied, the marks continue. Gaps are rarely less than 10 feet (3 meters) in length. When measuring a skidmark with gaps, the gap lengths are not included in the total measurement.

## Measuring Tire Marks

Skidmark measurements must include:

- ◆ Darker portion of the skidmarks caused by friction on pavement.
- ◆ Light gray or dark shaded area called the shadow.
- ◆ Any uncolored portion of road surface that shows scratches caused by material between the tire and road surfaces.

If photographs of the marks are needed, they should be taken first. Next, the dark portions and the shadow should be marked with chalk. The shadow is viewed by looking at the skid from a low angle, such as with your eyes approximately one foot above the ground. Measurements are then made. Skip skids are included in the measurements—gap skids are not included.







## Determining Speed

Accident investigators use skidmarks, together with other factors, to estimate the speed of a vehicle involved in an accident. **Skidmarks indicate the vehicle's MINIMUM TRAVELING SPEED**, not the actual traveling speed. It will show what speed a vehicle had to travel, at the very least, to leave that type of skidmarks. If it is found that this speed is in excess of the posted speed limit, then speed could be a factor in the accident. If not, it will indicate that the investigator must look for other evidence.

This chapter explains how to determine speed from the length of skidmarks. There are two other factors that affect the skidmark length in addition to speed —**coefficient of friction and grade or slope**.

### Coefficient of Friction

It is necessary to determine the coefficient of friction to establish how drag or resistance of a roadway affects a vehicle attempting to stop. This will vary from roadway to roadway since each is different in design, construction material, age and condition. Slippery pavement offers less drag so the stopping distance is greater. Rough pavement creates more drag and the stopping distance is less.

The following steps are used to find the coefficient of friction:

### How to Determine the Coefficient of Friction

**Example Problem:** You have made a test skid in a vehicle travelling 30 mph. The skidmark measurements are as follows:

Left Front = 60 feet  
Right Front = 62 feet

Left Rear = 57 feet  
Right Rear = 59 feet.

- Step 1** Add the lengths together.  
 $60 + 62 + 57 + 59 = 238$
- Step 2** Divide by 4 to find the average skidding distance.  
 $238 \text{ divided by } 4 = 59.5$
- Step 3** Square the speed.  
 $30 \times 30 = 900$
- Step 4** Divide 900 by 59.5 (distance or d).  
 $900 \text{ divided by } 59.5 = 15.13$
- Step 5** Multiply this by 0.033 (a constant).  
 $15.13 \times 0.033 = .4992 \text{ or } .50$

On a road surface in the general area of an accident, drive a vehicle like the one involved in the accident, if possible, or the patrol vehicle at what you believe may have been the speed of the vehicle that made the marks. It is important to use the same pavement in the same condition, but less important to use the same vehicle.

Drive at the estimated accident speed unless it would be unsafe. A good test speed is the speed limit if it is 35 mph (55 km/h) or less. Then, if accident skids are longer than speed-limit test skids, there is direct proof that the vehicle's speed was greater than the speed limit.

Hold the speed constant as the vehicle reaches the right place on the road; note the speed shown on the speedometer; hold the steering wheel steady; put on the brake very hard and very quickly; and hold it until the vehicle stops.

Then measure the length of each mark. Repeat the test. If the second test gives approximately the same stopping distance as the first (within 10%) consider the test adequate. If it does not, repeat the test until consistent results are obtained.

Add the four skidmarks together and divide by four. The result is the average skidmark length. The coefficient of friction is then determined by using the Speed Nomograph or with a mathematical equation:

- **Speed Nomograph**— Using a ruler, connect the distance measured and the speed of travel. Then read the number at which the ruler crosses the skid resistance line. This is the coefficient of friction.
- **Equation**— To find the coefficient of friction, square the speed and divide your answer by 30 times the distance:

$$F = \frac{5^2}{30d}$$

## How to Determine Grade With the Speed Nomograph

- Step 1**—Place the speed nomograph on a clipboard. Drill a hole at the center top of the clipboard and the nomograph. This is the pivot hole. Place a pencil with a weighted string through this hole.
- Step 2**—Place the clipboard's bottom edge on a perfectly horizontal surface and let the string hang free. Adjust the nomograph until the zero mark of the grade scale is aligned directly under the string. Then firmly fasten the nomograph to the clipboard with tape.
- Step 3**—Readings are now made at each end of a skidmark and in the center of the skidmark. To do this the clipboard's bottom edge is placed against the road surface. A grade scale reading is then made. At least three readings must be made.
- Step 4**—Average the readings. This gives the average grade and this is the number to use in computing estimated speed.
- 

## How To Find Grade

Grade or slope refers to the steepness of a hill and is important in estimating speed from skidmarks. It is the number of feet the roadway rises for each foot of level distance along the road. The resulting number is less than .010 except for very steep hills. If you are measuring the grade for its uphill effect, it is termed a positive grade and a plus sign (+) is placed in front of the number. If the downhill effect is measured, it is termed a negative effect and a minus sign (-) is placed in front of the number.

Grade must be measured when a test skid at the accident location cannot be made or the coefficient of friction is to be found using the math equation. Grade can be measured with the speed nomograph or with a level.



Turn Page  
For Another  
Method

## How To Find Other Factors

The preceding information has been concerned with finding minimum speed from skidmarks on a straight surface. If, however, the accident occurs on a curve and the curve is banked, other computations must be made to determine speed. Consideration may have to be given to superelevation (bank) or curve, whether a curve is sharp or long and sweeping and the critical speed and skidmarks on two different types of pavement.

### How to Determine Grade Using a Level

- Step 1**—Obtain a carpenter’s or mason’s level and a ruler or tape measure. The longer the level, the more accurate the measurements will be.
- Step 2**—Lay the level on the roadway surface with one end uphill and one end downhill.
- Step 3**—Raise the downhill end until the bubble centers, and hold it in that position. Then measure the distance from the roadway to the bottom edge of the level.
- Step 4**—Divide this distance by the length of the level. For example, if the distance is one inch, and the level is 36 inches long, 1 divided by 36 equals .0277. This means the grade is approximately 3 percent.

### Superelevation (Bank)

Superelevation is the grade across the roadway at a right angle to the centerline. It is measured from the inside edge of a curve to the outside edge. It is necessary that it be measured in cases where a vehicle slides or runs off a roadway curve. It is measured preferably with a template or level. It is usually 0.10 (10%) or less. The measurement should be made where the vehicle went off the roadway, or in the middle of the curve.

### Radius of a Curve

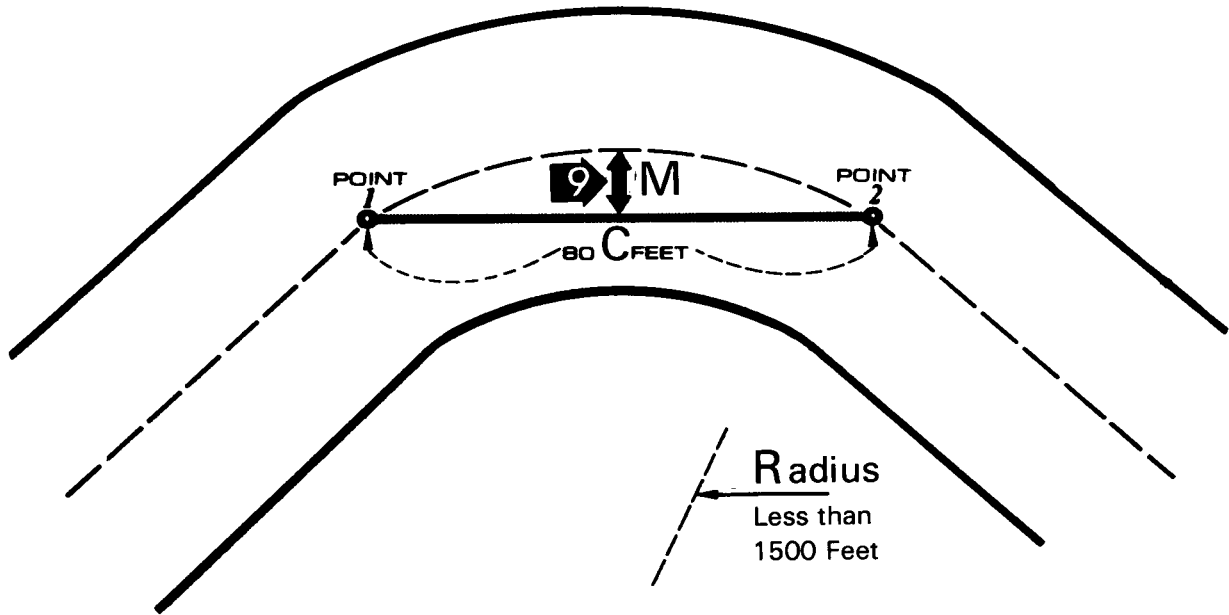
The radius of a curve must be measured so the critical speed of a curve can be determined. **Critical speed is the maximum speed a vehicle can negotiate a curve without being forced off the roadway by centrifugal force.** The method used to find the radius of a curve depends on whether it is sharp or long and sweeping.

### Sharp Curves

Sharp curves are those which have a radius of less than 1500 feet (460 meters). Steps for finding the radius are as follows:

- 1— Using a measuring tape, find two points on the center line 50 to 100 feet (15-30 meters) apart. Mark these points and leave the tape on the ground flat and straight. This is called the “Chord” (C in the figure at right).
- 2— Divide this length in half to locate the center and mark this point.
- 3— From this middle point, measure the shortest distance to the center line. If there isn’t a center line, measure to the outside edge of the roadway. This distance is the “Middle Ordinate” (M in the figure).
- 4— Use the following formula to find the radius:

$$R = \frac{C^2}{8M} + \frac{M}{2}$$



$$R = \frac{C^2}{8M} + \frac{M}{2}$$

$$R = \frac{80 \times 80}{8 \times 9} + \frac{9}{2}$$

$$R = \frac{6400}{72} + \frac{9}{2}$$

$$R = 88.88 + 4.5$$

$$R = 93.38$$

$$R = 93^{5*}$$

**Legend**

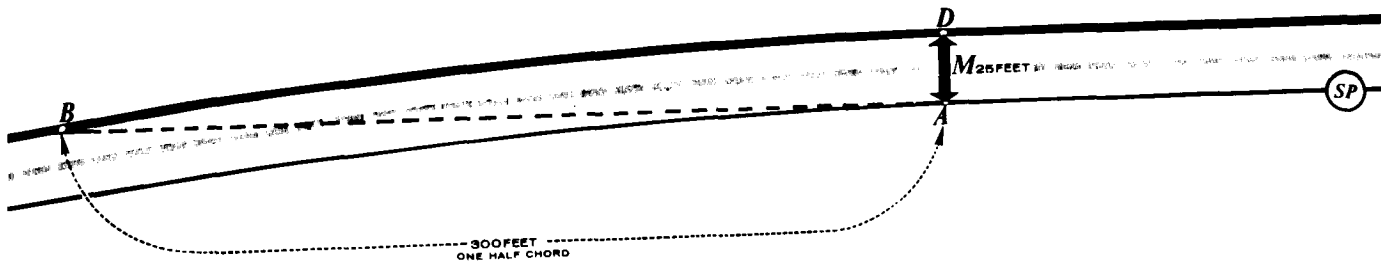
M Middle Ordinate

9 Length of M (9 Feet)

C Chord

93<sup>5\*</sup> = 93 Feet 5 Inches

*Measuring Radius of a Sharp Curve*



$$R = \frac{C^2}{8M} + \frac{M}{2}$$

$$M = 25$$

$$C = 2 \times 300 = 600$$

$$R = \frac{600 \times 600}{8 \times 25} + \frac{25}{2} = \frac{360000}{200} + \frac{25}{2} = 1800 + 12.5 = 1812.5$$

$$R = 1812.5 = 1812 \frac{1}{2} = 1812 \text{ FEET } 6 \text{ INCHES}$$

*Measuring Radius of a Long Sweeping Curve*

**LEGEND**

- A** THE BEGINNING OF THE CURVE
- B** EXTENSION OF SIGHTING LINE INTERSECTING OUTER EDGE OF ROADWAY
- A-D** WIDTH OF ROAD AT A
- (SP)** SIGHTING POINT ON THE STRAIGHT EDGE OF ROAD
- C** CHORD

## Long Sweeping Curves

There are curves with a radius of more than 1500 feet (460 meters). Steps for finding the radius are as follows:

1— On the inside portion of the roadway, locate the beginning of the curve as closely as possible. Do this by sighting along the straight portion with a straight edge. Mark this point (A in the figure above).

2— From this point, sight across the roadway with a straight edge, as though the road continued straight. Mark the point on the other side of the roadway (B in the figure).

3— Measure the road width at point A and mark it. (D in the figure). This is the middle ordinate. (M in the formula).

4— Measure the distance between points A and B and multiply by 2. This is the Chord.

5— Then use the following formula to find the radius:

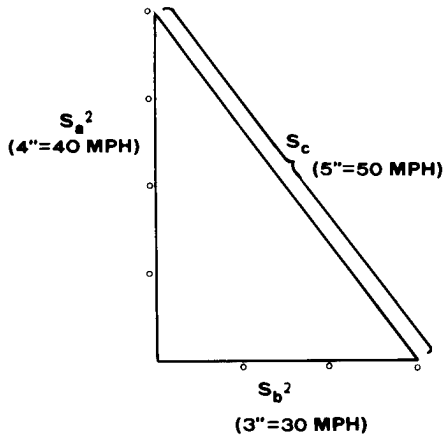
## How To Find Speed

Speed information is determined from skidmarks and will only indicate the minimum speed which the vehicle had to be traveling to produce that length of skidmarks. The following explanation will include finding speed from skidmarks left on one-surface type roadways and on two-surface type roadways.

## One-Surface Types

**Step 1**— Determine the coefficient of friction (see page 90).

**Step 2**— Determine grade. Add the grade factor to the coefficient of friction if it has an uphill effect. Subtract it if it has a downhill effect.



*Calculating Combined Speed  
With a Pythagorean Triangle*

**Step 3—** Determine the average skidmark length.

**Step 4—** Using the speed nomograph (see figure on page 96) and a straight edge, align the coefficient of friction (skid resistance) with the average skidmark length (distance). Then read the speed column to find the speed.

**Step 5—** If a speed nomograph is not available, the following formula can be used:

$$S = 5.5 d (F \pm f)$$

## Two-Surface Types

If an accident vehicle skids over two types of road surfaces individual measurements and calculations will have to be made on each surface type. This involves measuring separately the distances of skidmarks on each surface, and two test skids to determine separate coefficients of friction for each surface. Grade will usually be the same for both surfaces. Minimum speeds are then determined for each surface using the method outlined in the preceding paragraph. The following formula is then used:

$$S_c = S_1^2 + S_2^2$$

$S_c$  is the combined speed.

$S_1^2$  is the speed on surface one squared.

$S_2^2$  is the speed on surface two squared.

The Pythagorean right triangle can also be used to find combined speed. Scale the separate speeds. For example, have 1 inch equal 10 mph. On the corner edge of a piece of paper, mark the scaled speed on one edge, and the other speed on the other edge. Then draw the hypotenuse and measure it. This length is scaled to speed.

## How To Find Critical Speed Of a Curve

**Critical speed is the maximum speed a vehicle may negotiate a curve without being forced off the road by centrifugal force.** To find critical speed of a curve, the radius of the curve, superelevation and coefficient of friction must first be determined. The easiest way to find critical speed is to use the speed nomograph, taking the following steps:

1— Divide the radius by 2. Mark the result on the Distance scale.

2— Add the coefficient of friction and the superelevation together. Mark this result on the Skid Resistance scale of the speed nomograph.

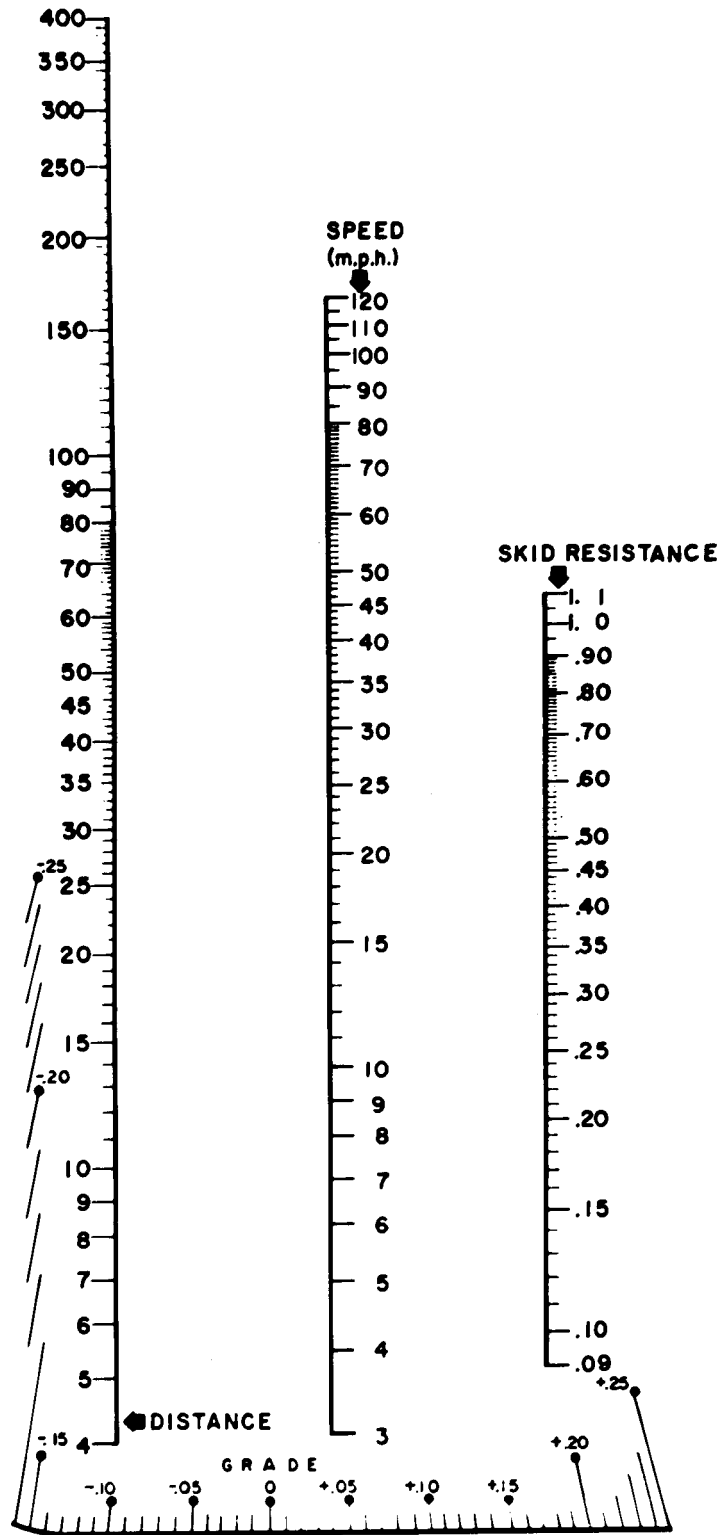
3— Connect both marks with a straight edge and read the Speed scale. This is the critical speed. The formula is:

$$S = 3.87 RF$$



**Speed Nomograph**





*Speed Nomograph*



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## Hit-and-Run Investigation

Hit-and-run accidents will vary in nature and degree of seriousness. The investigation of the scene will be much the same as previously discussed. However, the obvious problem is to find the vehicle and driver that fled the scene. To assure early apprehension of the hit-and-run driver, coordination between law enforcement and other agencies is required.

### Verification

The fact that a hit-and-run accident has occurred must be quickly but cautiously established. Military Police should carefully question the person, victim or witness who allege a hit-and-run and evaluate any physical evidence at the scene. Once verified, hit-and-run accidents require coordinated and immediate action.

### Coordination and Immediate Action

MPs at the scene must promptly furnish the MP station with information concerning what support is and is not needed. Any descriptive information concerning the vehicle and/or driver should be obtained and furnished to all personnel involved in the search. If possible, this information includes:

- Make of vehicle.
- Type of vehicle.
- Color.
- Identification data (license plate and decal number).

- Any outstanding characteristics.
- Accident markings-especially any visible damage.
- Information on the driver and any occupants.
- Location and time of the accident.
- Probable or estimated direction of travel from the scene.

Following receipt of descriptive information, the MP station should transmit all available information to all persons or agencies concerned. This may include civil police, other MP patrols, gate guards and service stations. The installation information office will release information to radio and TV stations.

USACIDC Special Agents (SAs) are required to perform hit-and-run investigations when:

**There is a fatality.**

**Vehicle is suspected of purposely being used as a lethal weapon.**

**Charge for the offense can result in more than one year of confinement. (See Articles 108,109,111 and 119, UCMJ.)**

If it appears that the accident will result in the lesser charge of "fleeing the scene of an accident" (Article 134, UCMJ), USACIDC will not be requested to investigate the accident.

Immediate search procedures must be implemented, based on likely routes of escape. This can be accomplished with roadblocks, checks of service stations, parking lots, gates, motor pools and clubs.

License and registration data should be obtained, if possible. If obtained, contact should be made with the owner to establish his status and the status of the vehicle.

## Investigation

A careful search of the scene to establish the point of impact should be made. All information gathered from the scene that may assist in identification of the vehicle involved should be disseminated as quickly as possible to all persons involved in the search. This information might include paint marks, vehicle parts, broken glass, soil, bloodstains, vehicle fluids, etc.

## Apprehending Violators

In addition to normal investigative procedures mentioned previously in this section, the following steps should be taken to help apprehend the violator:

- Distribution of circulars, letters or bulletins to civil police agencies, gate guards, unit commanders, service stations, garages and insurance agencies. This information should be disseminated at patrol briefings to all MPs.
- Contact medical facilities in the area to check on any person who may have sought medical attention following the accident. If blood and/or hair samples of the victim are needed, this should be arranged.
- Examination of stolen vehicle and accident reports.
- Examination of records of license suspension/revocation, etc.
- Examination of registration records, sales and transfers.
- Checks with automobile insurance agencies that cater to military personnel.
- Secure press, radio and television coverage.

Check the accident scene for additional witnesses, particularly the next day at the same time. Persons with established routes may be able to provide additional information.

When the suspected vehicle is located, a systematic examination should be initiated with these objectives:

Uncover physical evidence to establish whether or not it was involved in an accident. (There has been a case in which the victim's

lip print was matched to a print left on a suspect vehicle's bumper.)

Compare physical evidence obtained at the scene to that of the suspect vehicle. This includes damage, location, severity, marks etc. It may be necessary to examine the bottom of a vehicle for trace evidence.

Compare evidentiary material obtained from the victim and/or the victim's vehicle with evidentiary material collected from the suspect's vehicle.





## Legal Considerations

There are several legal considerations of particular importance to MPs engaged in traffic operations. This chapter provides certain rules, but is certainly not all inclusive. Further information and guidance on particular situations can be found in FM 27-1, Legal Guide for Commanders; DA Pam 27-22, Evidence; TC 19-22, Apprehension, Search and Seizure; Manual for Courts-Martial; and from the local staff judge advocate.

### Auto Inventory

When an individual is arrested for driving under the influence (DUI), or is subject to arrest involving transportation to the provost marshal's office, the individual's vehicle will be secured. If there is a location available to secure the vehicle at the place of apprehension, this may be done. However, if

there is no place to secure the vehicle, it will be impounded at a location under the control of the provost marshal and inventoried.

If a person is arrested for DUI as he pulls into his quarters' parking lot, there is no reason to impound the vehicle. However, if a person is arrested on an outlying range road; there is no place to secure the vehicle; and a possibility exists that items may be lost or stolen, the vehicle should then be impounded and inventoried.

### Search Incident To Apprehension

At the time of apprehension or immediately thereafter, the apprehending official should notify

the individual that he is being apprehended for a specific offense. The MP may then search the person and the immediate area. The search is made to detect weapons, destructible evidence, or means to effect an escape.

A search incident to an apprehension is a search of an arrested person and the area subject to the suspect's immediate control at the time of apprehension. Such a search is lawful only when there is probable cause for apprehension. The geographical limitation restricts the apprehending MP to searching the immediate area. This will include any area from which an individual may grab a weapon or destructible evidence with a sudden lunge, leap or dive from where he is situated.

**Note:** In the automobile type situation, the MP may search the individual and the area surrounding where the suspect was seated at the time the vehicle was stopped. This includes the driver's seat and the area under the driver's seat.

Not all arrests justify a search incident to apprehension. Generally, **you may not make a search** when the offense results solely in the issuance of a traffic citation. However, if the person who has been issued the traffic citation is normally required to appear before the desk sergeant for booking or release to the commanding officer, then a search of the individual and the immediate area may be made.

Normally you may not make a full search of a traffic offender. But if he acts in such a way to lead you to believe that he may be armed and there is a threat to your safety, you may then frisk the individual. Also if something happens that gives you probable cause to believe he is concealing evidence of a crime, then you may conduct a search of the suspect and his car. For example, when an individual is stopped for speeding he may make a motion to place something under the front seat, or to grab something under the front seat. In this type of situation, it is permissible to frisk the individual and examine the immediate area.

**Plain view.** If, while issuing a traffic citation or making an apprehension, you observe items in

plain view that would aid in a criminal prosecution, you may seize these items even though they are not on the person or in the immediate area. This is true even if the item(s) is not related in any way to the crime which you are investigating. Seizing an item in plain view in proximity to an individual may offer the basis to justify an apprehension or a further search of the same area or another area.

**Plain smell.** The rationale applied for plain view also applies for plain smell.

**Note:** While on patrol an MP may observe an item in a parked car, or while making a routine spot check of a vehicle he may notice something that will aid in a criminal prosecution. The MP may seize such items.

## Hot Pursuit

An MP patrol pursuing a person they have probable cause to believe is armed and has just committed a serious crime, may enter a vehicle or building believed to have been entered by the suspect, and search the building or vehicle for the person or for any weapons that might be used to further his escape. Once the individual pursued is apprehended, the search will be limited by the search incident to apprehension rules.

When the pursued person is not found on the premises, the officer may search the premises for evidence of the suspect's identity or whereabouts if the suspect is believed to be armed and dangerous, and if his identity or the location to which he is fleeing is unknown.

This rule applies when you receive a report of an armed robbery or rape and shortly thereafter you receive a description of the person who has committed the offense and notice that the person has just entered a barracks on post.

An MP patrol may enter a building (a barracks or house) and search wherever the suspect may be hiding. In addition, the patrol may search any areas where a weapon might be hidden, such as closets, under beds, under mattresses, in toilet bowls, etc.

## Entry and Search To Protect Persons and Property

A patrol may make a warrantless entry into any premises whenever there is reason to believe it is necessary to prevent injury to persons or serious damage to property and/or to render aid to someone in danger.

If while on patrol in a housing or barracks area you hear sounds of a fight or cries for help coming from a building, you may enter the building to prevent injury or damage. Once the danger or emergency conditions are over, you may only take the steps necessary to carry out the purpose of the original entry.

## Search for Identification

An MP may examine the personal effects of any person who appears to be incapacitated for one reason or another, to learn either the cause of the incapacitation or to identify the individual.

For example, if an MP night patrol observes a car in the parking lot of the PX snack shop after it has been closed, the car should be examined. If while examining the vehicle, someone is observed apparently unconscious, it is proper for the patrol to open the vehicle, learn if the individual is unconscious; notify the hospital, and obtain evidence of identification either from the individual or from the car.

## Unsecured Or Stolen Vehicles

A patrol that finds an unsecured vehicle that is registered on post or has a visitor's pass and is

capable of being secured, will secure the vehicle. A locally fabricated card or form should be left reminding the owner to secure the vehicle. If a vehicle registered on the installation cannot be secured, the patrol will attempt to learn the identity of the owner by contacting the desk sergeant or vehicle registration section. If time does not permit this, the patrol should search the vehicle for identification. If a vehicle is not registered on post or does not have a visitor's pass, the patrol may search it for identification.

If, while searching the car the owner of the vehicle is identified, the MP making the search for identification will attempt to contact the owner and ask him to secure his vehicle in the future.

If, while looking for identification, evidence of a crime is found, the evidence may be seized under the plain view rule (as discussed previously) and may lead to appropriate action against the individual for criminal conduct.

If the owner of the vehicle cannot be determined by looking for identification, the vehicle should be secured temporarily, and an attempt made through all available means to determine the owner or whether the vehicle was stolen.

**Note:** When MPs are permitted to make a search for identification, the scope of the search is limited to those areas where identification of owners of vehicles are normally found, such as glove compartments, consoles, or what appears to be documents lying in open view in the car.

## Automobile Searches

An MP may make a warrantless search of a car at the time and place of apprehension if there is probable cause to believe the vehicle contains seizable items. A warrantless search need not take place where apprehension of the occupant(s) took place if there is a reason for conducting the search at another place (such as the MP station).



If an individual is stopped for a traffic offense and the MP observes items in plain view (such as drugs or drug paraphernalia or evidence of another crime), this would give the MP probable cause to believe that other evidence is located in the vehicle. When this occurs, the vehicle can be searched there, or it can be moved to the MP station where a search of the entire vehicle may be made. If the owner of the vehicle is taken into custody and there is no likelihood of the vehicle being removed by a third party, a search warrant should be obtained.

### Caution

**If the search of the vehicle is not made within a reasonably short time—usually 20 minutes—authorization to search the vehicle should be obtained.**

An MP who wishes to make a search that is not otherwise authorized, may do so if the person or persons in control of the immediate area or object to be searched, voluntarily give their consent. To insure the consent is voluntary, the MP should warn the individual: “I have no authorization to search, and you have a constitutional right to object to the search. I would like to search you (or a particular place) for...”

If the person consents to a search, it probably would be considered voluntary. Refusal to consent to a search, like evasive answers to a question, may cause suspicion, but is not sufficient grounds for probable cause to search.

## Abandonment

An MP lawfully on patrol in any area may, without authorization to search, recover any abandoned property and examine its contents for seizable items. For instance, if you are on patrol and observe an unattended and unsecured vehicle in an isolated area during a period when no vehicles are authorized to park in that area, it is

proper to search the vehicle for any items that may be seized.

While on patrol, you may have occasion to arrest an individual for a traffic offense. If, before the vehicle comes to a halt you notice the occupant throw something from the vehicle, such as a small envelope, you may recover it and any objects inside may be seized.

## Hearsay Rule

Hearsay is defined as **a statement made out of court, and offered in court as evidence to prove the truth of its contents.** Such a statement is usually not admissible in court. The rule against hearsay is designed to limit a witness' testimony to the facts he has obtained by firsthand knowledge. There are many exceptions to the hearsay rule, including the following:

- **Dying Declarations**—used in trials for homicide. The declarant must have made the statement when he had no hope of recovery. In fact, the declarant must die for the statement to be admissible as a dying declaration. The statement may include the identity of the assailant and details of the offense.

- **Spontaneous Exclamations**—utterances induced by the shock of witnessing or participating in a startling event, such as the commission of a crime. There must be no opportunity for deliberation between the event and the utterance. A statement made by a victim under the conditions outlined for a dying declaration but who does not die, may be admitted under the spontaneous exclamation exception to the hearsay rule.

- **Fresh Complaints**—admissible solely to corroborate the testimony of the victim of a sexual offense. If the complaint also qualifies as a spontaneous exclamation, details of the offense, when included in the complaint, are

admissible to prove the truth of the matters stated.

✦ **Confession**— a complete acknowledgment of guilt such as, “I did not stop at the stop sign.”

✦ **Admission**— a self-incriminating statement not amounting to a complete acknowledgment of guilt such as, “I didn’t see the stop sign.”



**Traffic Control  
Studies**







## Study Uses and Types

Traffic control studies are designed to obtain information on various traffic problems and usage patterns on an installation. The provost marshal uses various studies to determine present and future needs concerning traffic control and associated traffic programs. By using automatic data processing (ADP) facilities, the storage, interpretation, retrieval, validity and costs of using this information is improved. FM 19-11 discusses ADP programming procedures.

The studies discussed in this section include:

- Traffic Control Devices
- Stop Sign Observance
- Observance of Traffic Signals
- Origin-Destination
- Vehicle Occupancy
- Pedestrian
- Speed
- Speed-Delay

- Motor Vehicle Volume
- Roadway Capacity
- Accident Records
- Parking
- Other Studies.

## Planning

Traffic control studies are used to insure the installation traffic control plan is adequate and provides for safe and efficient movement of traffic.

Traffic movement is an area of consideration in the installation master plan as prescribed in AR 210-20. Continuing traffic control studies improve the flow of information for planning and action between the provost marshal, post engineer, transportation officer and the safety officer.

Traffic studies are required when changes occur in traffic conditions. These might be major (such as a change in mission or relocation of units) or relatively minor (such as addition of a new secondary road or a new building with increased parking problems). The type of change will determine the nature and depth of each study.

Some general planning considerations follow:

- The public should be informed of the study and its purpose, especially if it will affect their day-to-day routine.
- An operating station (a team of one or two MPs who collect data) is used in traffic studies. Stations should be checked a minimum of 5 minutes each hour, so supervisors should be provided for every two to eight stations. A coordinator is appointed for the overall study.
- Each station should have two means of communication, preferably one being telephone, to notify the supervisor of problems or emergencies.
- Photographic and video techniques, still, aerial and motion, are extremely valuable in analyzing traffic studies. They are very effective in showing before and after views.

## Analyzing Mistakes

The purpose of making a study is to find answers to a problem. The person analyzing study results must guard against mistakes through oversimplifying the results or looking for the easy answer.

Some commonly made mistakes follow:

- Not evaluating and not exploring all available information.
- Not accounting for the four types of fluctuations—

1. Long-term trends which are not affected by short-term changes. This is caused by changes in basic factors contributing to a problem.
2. Fluctuations above and below the trend line of a long-term trend caused by the economy or short-term changes.
3. Seasonal changes, caused by the time of day or month affecting volume, speed and accidents.
4. Chance variations (also known as the “spatter effect”) which may cause misinterpretations during short studies.

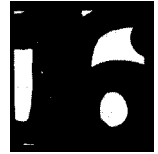
- Faulty reasoning in one or more of the following forms:

Unjustified assumption concerning cause and effect. (Just because one event follows another doesn't mean the first event causes the second event.)

● Making generalizations based on averages. Averages are useful in stating typical cases. (For example, icy roads may cause only 2 percent of the total accidents in a year, but on icy days they cause 100 percent of the accident experience.)

● Making generalizations based on specific incidents. (Staggering the work hours of two units may reduce the traffic load, but staggering the hours of all units may increase traffic load, since it reduces the number of car pools.)

● False accuracy. (If two figures, one accurate and the other a guess, are computed together, the result must be considered as probably inaccurate.)



## Devices Studies

A traffic control devices study can insure that the devices are adequate and placed where needed. Such studies are performed initially on an installation and then periodically. This periodic checking may be weekly or monthly, based on checking specified geographic areas or simply through using patrol reports on a daily basis.

There are three types of control devices that may be studied separately or in combination:

### Signs

Used to regulate, warn or guide traffic. These are studied to:

- Evaluate conditions
- Inventory
- Location
- Adequacy of the intended message.

### Signals

Used to regulate, warn or guide traffic. The purpose of these power-operated devices is the same as for signs.

### Pavement Markings

Used to regulate, warn or guide. These are the lines, patterns, words and other devices set into pavement or curbing. They are all studied for the same reasons.

## Conducting a Study

Two-person teams, on foot or in vehicles, are used to conduct traffic control devices studies. An



orderly system of travel should be organized for them and other teams used in each study. The study may be organized into day and night operations to compare differences. Special equipment should include:

- ◆ Manual on traffic control devices.
- ◆ Stopwatch.
- ◆ Tape measure (100 foot).
- ◆ Field sheets for collecting data (samples on next pages).

## Signs Study

Things to be checked on signs are:

- Type (stop, yield, right curve, etc.).
- Size and Shape.
- Color.
- Reflectorized or not (how).
- Location of Sign (street, distance from pavement or curb, distance from intersection, height).
- Visibility (size, location, lettering and maintenance).

## Signals Study

Phasing of signals is checked through several cycles with the stopwatch. It's helpful to make sketches of signals to understand the timing, phasing and sequence of signals. They are checked for:

- ◆ Type (fixed time, flashing, full traffic actuated).
- ◆ Location and position.
- ◆ Physical Information (size, color, number of lights).
- ◆ Timing of Each Phase (green, red and amber time).
- ◆ Phasing (time the light is applicable to each direction at an intersection. For example, green on Main Street for 45 seconds, and green on the intersecting street for 30 seconds.).

## Pavement Markings Study

Use the odometer of the vehicle to measure length of lines. Markings are checked for:

- Visibility (condition and reflectiveness).
- Type (solid, double lines, left turn lanes, etc.).
- Material used (paint, glass, etc.).
- Measurements (line length and width).

## Compiling Information

Information and data collected in this study may be recorded manually in a card file loose-leaf notebook, or through machine processing (ADP) using standard 80-column punch cards. Records of the study should be maintained in the traffic section of the provost marshal office.

## Using Information

- The traffic section should maintain maps of the installation and use overlays, markings, or colored pins to portray the location of traffic control devices and any special problems.
- Studies can be used to justify requests for corrective action, to include maintenance or standardization.
- Information can be collated with a study of high accident locations to determine standards of visibility, safety and maintenance.
- Studies of devices can be used with traffic capacity or volume studies to insure maximum safe flow of traffic.
- Devices studies can be used to recommend changes in devices due to revised laws or regulations.
- Studies can provide backup information on road reconnaissance and classification.

DATE 5 June SHEET 1 of 10  
 STREET 1st FROM Provost Ave. TO Marshal Ave. LENGTH 600' WIDTH 30'

Side of Street	Type or Legend	Size & Shape	Color	Type of ReflectORIZATION	Position			Remarks
					Height	Distance from Highway	Distance from Corner	
North	stop	30"	Red	Sheeting	7'-0"	6'-0"	10'-0"	
North	Curve	24" X 24"	yellow	Sheeting	6'-8"	4'-8"	300'	

DATE 5 JUNE SHEET 2 of 12 SHEETS

LEGENDS & SYMBOLS								
LOCATION	TYPE	LENGTH	WIDTH	MATERIAL	LOCATION	DESCRIPTION	MATERIAL	DIMENSION OF LETTERS
Provost Ave. to Marshal Ave.	Center-line	600'	4'	White Paint	Provost Ave. west of 1 <sup>st</sup> St.	Crosswalk	White Paint	

Samples of Field Sheets for Collecting Study Data

# SIGNAL INVENTORY

## FIELD SHEET

DATE \_\_\_\_\_

SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

LOCATION \_\_\_\_\_

CONTROLLER TYPE \_\_\_\_\_

DIAL SETTINGS \_\_\_\_\_

ACTUATED TIMING \_\_\_\_\_

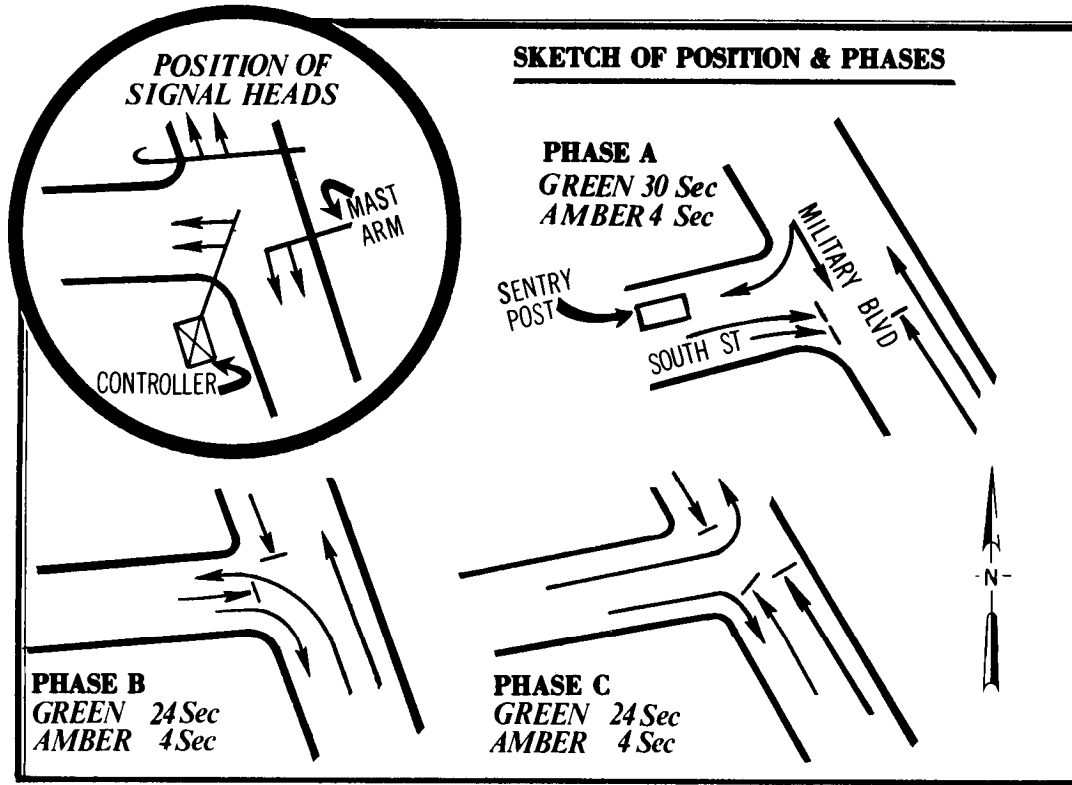
NO & SIZE OF HEADS \_\_\_\_\_

NO & TYPE OF DETECTORS \_\_\_\_\_

REMARKS \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Signal Inventory Field Sheet



## Stop Sign Observation Studies

Studies of stop sign observance on the part of drivers are made to:

- Determine the need for keeping or replacing stop signs.
- Replacing stop signs with yield signs.
- Compare driver obedience of stop signs to accident frequency.
- Determine how to improve driver obedience. (This may be selective enforcement, education, relocation of the signs, fresh painting or reflectorizing.)

### Conducting Studies

The key ingredients in conducting stop sign observance studies are planning and recording.

### Planning

Unless traffic is very heavy, one person can record data for this study at each sign.

The MP should not be in uniform. MP patrols should avoid the area during the time of the study.

All high accident frequency locations should be studied. At least 25 other intersections with stop signs should also be studied for comparison purposes.

The study at each stop sign should last one hour or

more and include at least 50 vehicles for each approach to the intersection.

### Recording

The field sheet below is used to record data during the study. The observer makes an appropriate entry as each vehicle enters the intersection.

LOCATION \_\_\_\_\_

TIME \_\_\_\_\_ TO \_\_\_\_\_ WEATHER \_\_\_\_\_

N/S/E/W/On		ENTERED FAST OVER 15 M.P.H.	
		ENTERED SLOW - 4-15 M.P.H.	
		PRACTICALLY STOPPED - 0-3 M.P.H.	
		STOPPED BY TRAFFIC	
		VOLUNTARY FULL STOP	
	RIGHT	STRAIGHT	LEFT
N/S/E/W/On	LEFT	STRAIGHT VOLUNTARY FULL STOP	RIGHT
		STOPPED BY TRAFFIC	
		PRACTICALLY STOPPED - 0-3 M.P.H.	
		ENTERED SLOW - 4-15 M.P.H.	
		ENTERED FAST OVER 15 M.P.H.	

DATE \_\_\_\_\_ RECORDER \_\_\_\_\_

*Driver Observance of Stop Signs Field Sheet*

Data from the field sheets is then transferred to a summary sheet (sample below). In analyzing observance, the following percentages of full stops are used:

Excellent observance 75% or more  
 Good observance 51% to 74%  
 Problem intersection 50% or less

Sign on _____		Date _____		Weather _____										
Location _____				Street _____										
Type of vehicle	Made a full stop						Practically stopped		Entered slow		Entered fast		Total	
	Voluntary		Stopped by traffic		Total		0:8 M.P.H.		4:15 M.P.H.		over 15 M.P.H.			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
MORNING _____ TIME _____														
Passenger---														
Commercial..														
Total-----														
AFTERNOON _____ TIME _____														
Passenger---														
Commercial..														
Total-----														
EVENING _____ TIME _____														
Passenger---														
Commercial..														
Total-----														
TOTAL														
Passenger---														
Commercial..														
Total-----														
Compiled by _____														

*Driver Observance of Stop Signs Summary Sheet*

## Uses

The results of this study may be used to determine the following:

- Need to improve stop sign observance through a special enforcement program. (Facts from this study can be used to justify this need to the public.)
- Need to remove unnecessary stop signs at intersections where a combination of the following factors exists:
  - View at the intersection is unobstructed.

- Vehicular conflicts at the intersection are not a problem.

- The accident rate at the location is not a factor.

Need to make stop signs more visible. Lack of visibility may often be the reason for nonobservance. Some factors in this are:

- Hourly or seasonal variations (weather, leaves, branches on trees, parked cars, etc.)
- On wide streets, drivers turning left may not obey stop signs on the right side of the road. This can be corrected by putting another sign on the left side of the road, or overhead flashing red lights.
- A stop line painted on the pavement may also help motorists observe stop signs.



## Traffic Signal Observance Studies

These studies are made to check driver observance of traffic control signals at intersections. They can be used to determine need for selective enforcement, education, retiming or other physical changes.

### Conducting Studies

As for stop sign observance, planning and recording are the key steps in traffic signal observance studies.

### Planning

At a normal intersection, two MPs are needed to

conduct this study. They should not be in uniform, and MP patrols should avoid the area.

Intersections experiencing congestion or a high number of accidents are checked. In addition, several other intersections with signals are checked for comparison purposes.

The study should be conducted for at least three (3) hours. This time is broken into one-hour periods in the morning, afternoon and evening.

At least 50 vehicles should be checked at each intersection during each one-hour period.

If the study is at a high accident location, the check is made during the time frame of the accidents.



(Note: If the intersection is multilane, additional observers may be required.)


## Recording

Two observers stand on opposite corners of the intersection, diagonally, and face the traffic signal. In this manner they can check traffic in two lanes, alternating on their lefts and rights.

MPs use the field sheet (shown below) to record data. Vehicles enter an intersection on a green, amber or red light. An additional column can be added for those drivers who jump the red light.

DATE \_\_\_\_\_ LOCATION \_\_\_\_\_  
 WEATHER \_\_\_\_\_ ROAD SURFACE CONDITIONS \_\_\_\_\_  
 TIME: FROM \_\_\_\_\_ TO \_\_\_\_\_

INDICATE NORTH BY ARROW



Totals												
			ENTERED ON RED									
			ENTERED ON AMBER									
			ENTERED ON GREEN									
Totals	ENTERED ON RED	ENTERED ON AMBER	ENTERED ON GREEN	L	S	R	L	S	R	ENTERED ON GREEN	ENTERED ON AMBER	ENTERED ON RED
				R	S	L	R	S	L			
				L	S	R	L	S	R			
			ENTERED ON GREEN									
			ENTERED ON AMBER									
			ENTERED ON RED									
Totals									Totals			

**LEGEND**  
 R- RIGHT TURN  
 L- LEFT TURN  
 S- STRAIGHT AHEAD

RECORDER \_\_\_\_\_

*Traffic Signal Observance Field Sheet*

Data from the field sheets is then transferred to the summary sheet (below). In determining percentage of observance, only the number going through red lights are subtracted from the total, not yellow lights.

In analysis, the following observance percentages are used:

- Excellent observance            99%
- Good observance                97%
- Problem intersection         96% or less

Need for a special enforcement program to improve signal observance. (Facts of this study can be used to justify this need to the public.)

Need to make physical changes in traffic signals.

Faulty timing may be responsible for some observance problems, particularly if phases are too short. Lights may be placed at improper angles, which may allow both approaches to see lights at the same time. This can be corrected by using hoods or louvers. Stop lines painted on the pavement may help. Directional lights may be necessary at intersections with a high number of left turns.

### Uses

The results of this study can be used to determine:

Need to improve visibility of the signals. Hourly or seasonal changes must be considered, such as foliage, or the position of the sun in the

Location _____		Date _____		Weather _____									
Morning Hours _____		Afternoon Hour _____		Evening Hour _____									
Entering on		Passenger vehicles				Commercial vehicles				Total vehicles			
		Left	Straight	Right	Sub-total	Left	Straight	Right	Sub-total	Left	Straight	Right	Total
Green	No.												
	%												
Yellow after green	No.												
	%												
Red	No.												
	%												
Jumped light	No.												
	%												
Total	No.												
	%												
Compiled by _____													

*Driver Observance of Traffic Signals Summary Sheet*

morning or late afternoon. Hoods and louvers may help this type of situation also. Illuminated advertising signs may be interfering with

signal observation. Another observation problem arises at complex intersections where signals may be improperly located or confusing.



## Origin-Destination Studies

An origin-destination study is used to determine travel patterns of traffic on an installation during a typical day. They are useful in assisting long-range traffic planning, especially when there are substantial changes anticipated in the installation mission or strength.

This is a study to determine and analyze trips. Trips are defined as one-way movement, from where a person starts (origin) to where the person is going (destination). Trips are further classified as follows:

**Internal**— From one point on post to another point on post.

**External**— From on-post to off-post or vice versa.

**Through**— From off-post to off-post, by going through the installation.

### Conducting Studies

There are five methods which can be used in conducting these studies; so this decision must be made before planning can be completed.

#### Planning

The number of personnel needed to conduct this study depends on the method of study used.

A sampling of the person's driving (or making trips) will be taken. This sample is then multiplied

to represent the total population. Because of this, a true representation of drivers must be made. The greater the number of samples, the more accurate the study will be.

Motorists should be made aware in advance of the reasons for the study. Information concerning the study should be disseminated to the public.

## Recording

A sample of questions which can be used in an origin-destination study is shown below:

1. How do you normally travel to and from your place of duty?

Drive car  
Passenger in car  
Public transit  
Walk

2. If you drive a car please answer the following:

a. How many people are in the car (include self)?

One     Two     Three  
 Four     Five     Six

b. Where does your trip originate?

Street Address:  
City:

c. Through which gate do you enter the post?

Main Gate     West  
 Sixth St. Gate

d. Where do you park your car during duty hours?

Give parking lot number, nearby building number, or nearest intersection:

e. What is your place of duty?

f. If in car pool, what is on-post destination of other members of car pool?

There are five methods by which an origin-destination study can be made. These are:

1. **Registration Questionnaire**—Driver lists are obtained from the vehicle registration form and each is sent a questionnaire at his place of duty with a return date requested.

2. **Post Card**—A prepaid post card with the questionnaire on it is distributed to all drivers entering the installation during a given time. A traffic volume count is made at the time the cards are distributed.

3. **Roadside Interview**—This method requires advance publicity and a greater number of personnel. Uniformed MPs should conduct the interview. Considerations should include:

Interview 50 percent of vehicles during non peak hours.

Interview 25 percent of drivers during peak hours.

Insure stations are visible and safe.

One interview should not take more than 40 seconds, and there should not be more than five (5) interviewers in a file (one lane).

Approximately 300 drivers can be interviewed per hour. Stations do not have to be operated at the same time.

A manual count of traffic is made by hour, direction and type of vehicle. By doing this the sample can be expanded into a 24-hour analysis.

4. **Tag on Car**—This is a limited study good for studying through trips. It is conducted by having all cars counted when they enter the installation. At stations just inside the entrance gates, MPs stop vehicles and affix a piece of colored tape (different for each station) to the car's front bumper. At exit gates of the installation, a tally of cars with each colored tape is made. It provides a rough estimate of through trips on the installation. It's necessary for each installation entrance and exit to be manned during this study.

5. **Comprehensive Home Interview**—This method is performed by other governmental organizations. It is not normally done on a military installation unless it is near a large city that is under review. It provides the most detailed data.

The guide to origin destination studies table can be

helpful in choosing the best method for your studies.

Origin-destination studies may be augmented with the following studies:

**Land Use Study**— This study of an installation and the surrounding area concerns residential, industrial, commercial and recreational land use. See AR 210-20 for more information.

**Growth Trends Study**— This study concerns trends in population, land use and highway travel. It is made in conjunction with planning agencies, utility companies and highway officials. Population trends are classified as mili-

tary/civilian office workers, civilian maintenance, contractors, hospital personnel, service personnel and visitors.

**Off-Post Route Improvements**— Studies of new routes or changes in routes off post by local officials should be considered.

## Uses

Information from these studies can be used to anticipate present and future traffic patterns,

No.	Item	Type of Survey				
		a	b	c	d	e
		Address lists or questionnaire	External post card	Roadside interview	License plate or tag-on-car	Home interview
1	Applicability -----	On most installations. When work trips dominate traffic.	When through trips are significant and internal trips are not significant.	Supplement to on-post questionnaire. When through trips are significant and internal trips are not significant.	Determining proportions and patterns of through traffic. For specific movements in dense area. Determining potential bypass traffic.	Only in conjunction with Bureau of Public Roads and State highway department.
2	Method and place of interview.	Distribute questionnaire at place of work or duty.	Distribute post cards on roadway at or near entrance gates.	Interview on roadways at or near entrance gates.	Mark cars and/or check license plates at or near entrance gates.	Sample interviews in selected dwelling units.
3	Size of Sample ----	Variable -----	25-50% return desirable.	20% of total two-way traffic approximate minimum (more on low volume roads).	Variable -----	Minimum of 5% to 20% depending on size of adjacent urban areas.
4	Means of sample control.	Relate interview or responses to total population in each area interviewed.	Relate returns to total traffic at each location.	Relate returns to total traffic at each location by hours of the day.	Relate cars tagged to cars counted at each location.	Preselect size or sample; "screenline" check of data.
5	Accuracy -----	Approx. 75-95% (estimated).	80-90% Less uniform distribution of returns.	80-90% ----- Good distribution of returns.	Good for through trips	85-100% Uniform distribution of returns.
6	Method of data processing.	Machine or manual	Machine -----	Machine -----	Manual -----	Machine
7	Costs -----	Minimum -----	Substantial -----	Substantial -----	Minimum -----	Maximum
8	Advantages -----	Minimum cost -----	Minimum interference to traffic.	Control of sample -----	Low cost -----	Accuracy
		Large sample ----- No interference to traffic.	Adaptable to peak hours. Done in 1 day -----	Accuracy of trip distribution.	Provides simple answer to specific problem.	Completeness
9	Disadvantages -----	May not fully reflect nonwork travel. Does not detect through trips.	Does not fully reflect internal trips. Incomplete control of response.	Interferes with traffic in peak hours. Does not fully reflect internal trips.	Limited to specific problems only. Difficult to match vehicles (accuracy).	Greater cost, time, complexity.

especially the demand to be placed on the road network in the future. When compiling data the percentage of interviewed should be converted to represent a 24-hour day. The studies provide information concerning:

The number of trips into, within, and through an installation; and time of day, mode of travel and number of occupants in a vehicle during a trip.

Present travel patterns; areas that generate the most traffic; and efficiency of traffic lanes concerning flow and safety.

Evaluation of the general road plan and present or foreseeable problems.

Determining need for revised flow patterns, alternate routes, new streets and parking areas.

Help determine parking patterns in major functional areas of the installation.

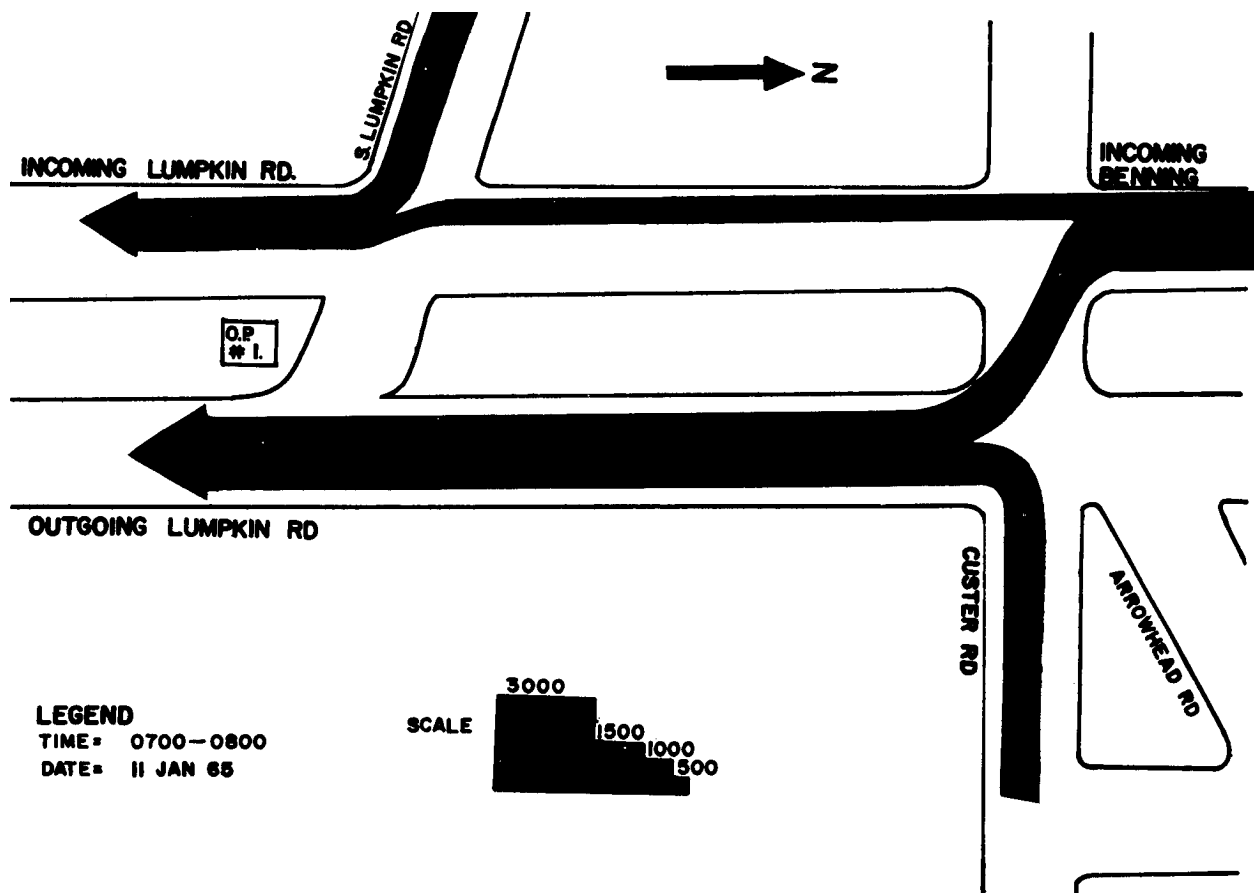
Future travel patterns can be determined by being aware of future projects or changes. By

anticipating changes, potential traffic problems can be avoided. This might include changes in population, new residential areas or service facilities.

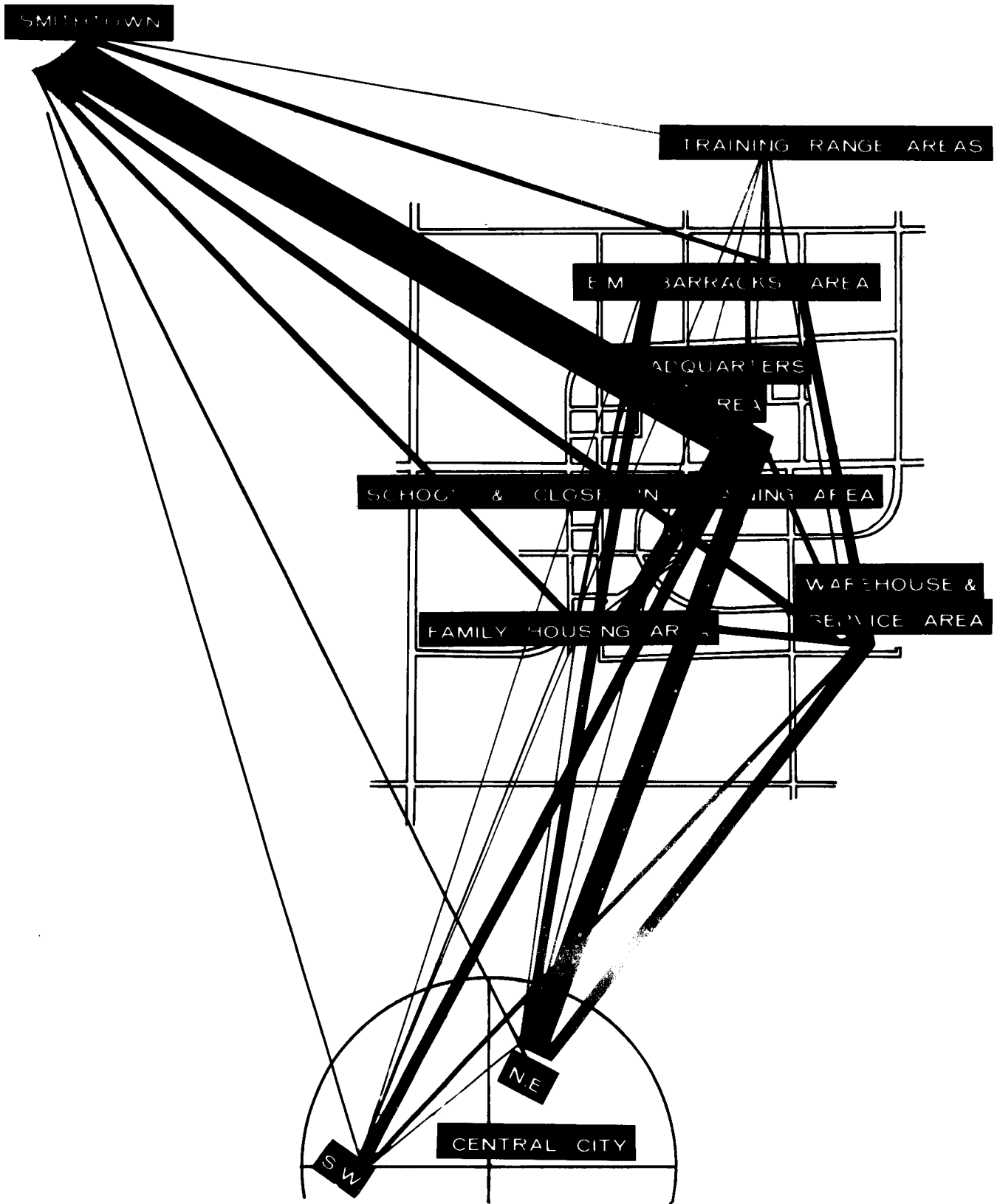
## Graphics

There are several methods to graphically portray information obtained from these studies. Two examples are the line desire map and the route volume map (pages 126 and 127). In the line desire map, each dark line or bar, of varying widths, represents traffic volume from one key area to another. The line desire map locates pictorially the major traffic patterns.

Another method of showing this information is by bars signifying volume superimposed on an actual road map. This is a route volume map.



*Route Volume Map*



*Travel Desires at a Military Installation*







## Vehicle Occupancy Studies

These studies are used to determine the number of occupants in each vehicle passing a given location or entering/exiting a particular road. They can be used in conjunction with volume studies.

### Conducting Studies

The steps in conducting a vehicle occupancy study are planning the study, recording the data and using it.

#### Planning

One uniformed MP is needed at each location.

The study should begin 60 minutes prior to the first

work shift arriving for duty and end 15 minutes after the shift has reported for duty.

Separate counts can be made for morning and evening peak traffic periods or during the nonpeak periods.

Counts of passenger cars, trucks and military vehicles should be in separate categories. Counts of buses or taxis should be obtained from transit system records.

At least 500 vehicles per location should be surveyed.

#### Recording

The field sheet and summary sheet on the following pages should be used in conducting this study.

## Uses

pool program or evaluating an ongoing car pool program. A rate of 3.0 persons per passenger car is considered excellent.

The results can be used to:

- Determine the need for encouraging a car
- Determine the need for future public transit systems, or the need for future traffic or parking facilities.

Location: 38th + Provost  
 Date: 5 Nov 73  
 Time: Start: 1000 Stop: 1200  
 Type of Traffic: Passenger + Light Truck  
 Recorder: Smith

Persons per vehicle	Direction of traffic	Totals	Direction of traffic	Totals
1 (Driver only)		Veh. 17 Per. 17		Veh. 11 Per. 11
2		Veh. 10 Per. 20		Veh. 7 Per. 14
3		Veh. 5 Per. 15		Veh. 5 Per. 15
4		Veh. 3 Per. 12		Veh. 3 Per. 12
5		Veh. 1 Per. 5	0	Veh. 0 Per. 0
6	0	Veh. 0 Per. 0		Veh. 0 Per. 0
7	0	Veh. 0 Per. 0		Veh. 0 Per. 0
8 or more		Veh. 0 Per. 0		Veh. 0 Per. 0

Total Vehicles: 36  
 Total Occupants: 70  
 Total Persons per vehicle: 1.9  
 Total Vehicles: 26  
 Total Occupants: 52  
 Total persons per vehicle: 2.0

Field sheet for motor vehicle occupancy

Location \_\_\_\_\_ Date \_\_\_\_\_  
 Time \_\_\_\_\_ Type of Traffic \_\_\_\_\_

Persons per vehicle	Direction of traffic _____		Direction of traffic _____		All traffic	
	No. of vehs. of total	Percent of total	No. of vehs. of total	Percent of total	No. of vehs. of total	Percent of total
Driver only						
2						
3						
4						
5						
6						
7						
8 or more						
Total-----		100%		100%		100%

Total vehicles \_\_\_\_\_ Total vehicles \_\_\_\_\_  
 Total occupants \_\_\_\_\_ Total occupants \_\_\_\_\_  
 Ratio--persons \_\_\_\_\_ Ratio--persons \_\_\_\_\_  
 Per vehicle \_\_\_\_\_ Per vehicle \_\_\_\_\_

Summary sheet for motor vehicle occupancy



## **Pedestrian Studies**

Pedestrian studies are used to determine if any pedestrian-vehicle conflicts exist at certain locations. They are also used to establish needs for special precautions at high accident frequency locations and other congested areas, such as schools, hospitals or troop areas.

### **Conducting Studies**

#### **Planning**

One MP is enough to conduct a count at a location if the pedestrian volume is less than 2,000 per hour. The MP should not be in uniform.

Counts should be made between the hours of 0600 and 1800. This time can be tailored to meet specific needs.

If service facilities, such as the exchange or commissary are studied, counts should be made on days of heavy use, such as payday.

#### **Recording**

Counts are best made with mechanical counters.

Counts should be tabulated by 15- or 30-minute intervals, so pedestrian traffic can be related to vehicle traffic.

## Uses

The results of pedestrian studies can be used to:

Determine needs for special pedestrian protections such as sidewalks, fences, crosswalks, etc.

Determine if pedestrian traffic interferes

with vehicle turning movements. A decision can be made whether or not to adjust traffic signals.

Determine need for a school safety patrol.

Determine extent of jaywalking. If 5 percent of the people jaywalk, remedial action is necessary. This should be educational in nature at first. If this does not work, control or enforcement procedures should be started.



## Speed Studies

Speed studies are used to accomplish the following:

- Determine whether speed limits are too fast or too slow.
- Determine proper speeds for new or improved roads.
- Determine if and where traffic control devices are needed.
- Determine relationship between speed and the number of accidents.
- Measure effectiveness of speed control programs or study the need for change in the enforcement program.

### Conducting Studies

#### Planning

One or two MPs are required to conduct this study at each location. They should not be in uniform and MP patrols should avoid the area.

To be reflective of normal driving behavior, the study should be made in good weather and without Military Police presence. MP observers should be inconspicuously located while collecting data.



DATE 11/19/51 LOCATION Rowest + 4th DIRECTION South on 4th TIME 1500-1600  
 WEATHER Clear ROAD 2-lane WIDTH 40 ft CONDITION Good TYPE PAVEMENT Concrete  
 RECORDER J.E. Jones

Seconds	MPH 88'	X MPH 176'	Civilian			Military		Cum total	Cum %
			Passenger type	Tr & Bus	Total	Passenger type	Trucks		
1	60.0	120.0							
1 1/5	50.0	100.0							
1 2/5	42.8	85.7							
1 3/5	37.5	75.0							
1 4/5	33.3	66.6	1		1			1	
2	30.0	60.0	11		11			12	
2 1/5	27.2	54.5	11		11			23	
2 2/5	25.0	50.0	111		111			34	
2 3/5	23.0	46.1	111		111			45	
2 4/5	21.4	42.8	111		111			56	
3	20.0	40.0	111		111			67	
3 1/5	18.7	37.5	111		111			78	
3 2/5	17.6	35.2	111		111			89	
3 3/5	16.6	33.3	111		111			100	
3 4/5	15.7	31.5	111		111			111	
4	15.0	30.0	111		111			122	
4 1/5	14.2	28.4	111		111			133	
4 2/5	13.6	27.2	111		111			144	
4 3/5	13.0	26.1	111		111			155	
4 4/5	12.5	25.0	111		111			166	
5	12.0	24.0	111		111			177	
5 1/5	11.5	23.0	111		111			188	
5 2/5	11.1	22.2	111		111			199	
5 3/5	10.7	21.4	111		111			210	
5 4/5	10.3	20.6	111		111			221	
6	10.0	20.0	111		111			232	
6 1/5	9.6	19.3	111		111			243	
6 2/5	9.3	18.7	111		111			254	
6 3/5	9.0	18.1	111		111			265	

Sample Speed Study Field Sheet

The study is divided into three time periods: 0900-1200, 1500-1800 and 2000-2200. Each location should be studied at least one (1) hour with at least 50 vehicles passing the location.

Speeds are checked on a controlled basis, such as every second or every third vehicle.

The study should not be conducted at a location that has recently been subjected to a speed enforcement program.

## Locations

Speed studies are usually made at the following types of locations:

Roadways which have recently had changes in the speed limit or where existing speed limits need to be evaluated.

Locations where traffic control devices are proposed.

All major thoroughfares.

All high accident frequency locations.

Locations which normally require a reduction in speed are not studied unless specifically desired. They do not provide information on normal driving speeds.

## Recording

The sample field sheet shown in this chapter will assist in compiling data. One sheet should be used for each direction of travel.

## Timing Equipment

There are several types of equipment or methods that may be used in conducting speed tests. These include:

**Radar**— If available, radar equipment provides highly accurate readings. It can be used day or night, but must not be seen by motorists. If it is, they tend to slow down, and a normal speed is not obtained.

**Electric Timers**— These are also highly accurate. They are electric stopwatches which are actuated

and stopped by vehicles passing over air tubes stretched over the roadway.

**Mirror Boxes**— Mirror boxes and stopwatches used over a measured course will give fairly accurate readings of speed.

**Pace Method**— This is the most unreliable and inaccurate method. If employed, the pace cars must be calibrated and unmarked.

## Uses

In analyzing data received in a speed study, maximum and minimum speeds under normal conditions are the important facts. Average speed is not useful.

Maximum safe speed is considered to be the **85th percentile speed** and minimum safe speed is the **15th percentile speed**.

Follow these steps to find 85th and 15th percentile speeds:

1. Find the total number of vehicles checked. This is the **cumulative total**.
2. Find 15 percent of this total number (multiply the number by .15). Round off the results to the nearest whole number.
3. Subtract this 15 percent from the cumulative total. The result is the 85th percentile.
4. Find the total number of vehicles traveling in each speed classification. (For example, 1 vehicle was traveling 66.6 mph, 2 vehicles at 60.0 mph, 2 at 54.5 mph, etc.) In the cumulative total column, make a running total.
5. Starting at the top of the cumulative total column (the highest speed recorded), add the numbers downward until the number most equal to 15 percent of the total is found. This is the 85 percent percentile speed.
6. To find the 15 percentile speed, subtract the 15 percent from the cumulative total.
7. The 15th percentile will be the **85th percentile speed**. The 85th percentile will be the **15th percentile speed**.

A speed study shows what drivers feel is the maximum and minimum safe driving speeds.

From this information, speed limits can be readjusted. (Excessively low speed limits encourage drivers to ignore them.)

A study helps determine where traffic control devices are needed to encourage safe approach speeds to intersections or other dangerous locations.

A study assists in timing traffic signals. The

length of a proper amber time depends on the speed of approaching traffic. Speed limits are never set to match the timing of signals.

A traffic speed map can be prepared showing areas where slow speeds cause congestion and fast speeds create danger areas. Such a map is useful when selecting alternate routes or through streets.

Speed studies can determine if complaints about speeding are justified.



## Speed-Delay Studies

These studies are used to determine **speed variations** along a route at different times; **number, location, cause, frequency, and duration of delays**, and **overall speed and travel time** along a route.

### Conducting Studies

#### Planning

Two MPs in an unmarked car are required to

conduct this study along each desired route. One MP is the driver and the other the recorder.

The MPs need a stopwatch and field sheets.

Routes to be studied should be predetermined. Their lengths and key landmarks should be established.

Peak traffic hours should be determined. The study is made during each of the peak hours on the same day.

For planning, one car should be used for every two miles of route to be checked during peak periods.



## Uses

A speed-delay study shows overall speed and moving speeds between specified locations.

It shows delay times, locations and total delay times. It can show cause, frequency and location of delay.

A study made during peak hours and nonpeak hours is good for a comparison study.

A flow map of speeds can be made. the speeds on different routes can be shown by color code or proportional width of bands.

The study locates points of congestion and insufficient road capacity.

An evaluation can be made of traffic control devices and the adequacy of posted speed limits.

The study assists in determining priorities for traffic control and road construction programs.

Studies of emergency vehicles at different times of day, with and without emergency lights and siren indicate if they are actually useful or save substantial time.





## Motor Vehicle Volume Studies

These studies are made to obtain information on the number, direction and variations in the volume of motor vehicles passing through an intersection or along a major route.

### Conducting Studies

#### Planning

One MP can observe and record information on 1,000 vehicles per hour along a roadway. Two MPs can observe and record information on a normal two-way intersection. More MPs will be necessary if volume exceeds 1,500 vehicles per hour.

Equipment necessary to conduct this study are a wristwatch, field sheets, summary sheets and counting equipment.

Vehicle counts are usually made to cover 10-, 12-, or 24-hour periods. They should be made on weekdays to obtain a normal volume count. The count should begin a half hour prior to peak traffic periods and end a half hour after each peak period. If traffic volume is consistently high during the day and night, an 18-hour count should be made.

The study should be conducted in good weather.

#### Recording

MPs conducting the study should be positioned so they have an unobstructed view of the area. If the



**FIELD SHEET**

DATE \_\_\_\_\_ LOCATION \_\_\_\_\_

WEATHER \_\_\_\_\_ ROAD SURFACE CONDITIONS \_\_\_\_\_ TIME FROM \_\_\_\_\_ TO \_\_\_\_\_

INDICATE NORTH BY ARROW

**RECORDER**

*Motor Vehicle Volume Field Sheet*

count is made at an intersection, MPs should be on diagonally opposite corners.

The field sheet (sample above) is used to record data on an intersection. The number and action of each vehicle entering the intersection is recorded

as appropriate. A new sheet is used every one-half hour (every quarter-hour if volume is very heavy).

The summary sheet (sample on page 145) is used to compile data recorded on the field sheets.

LOCATION \_\_\_\_\_ DATE \_\_\_\_\_

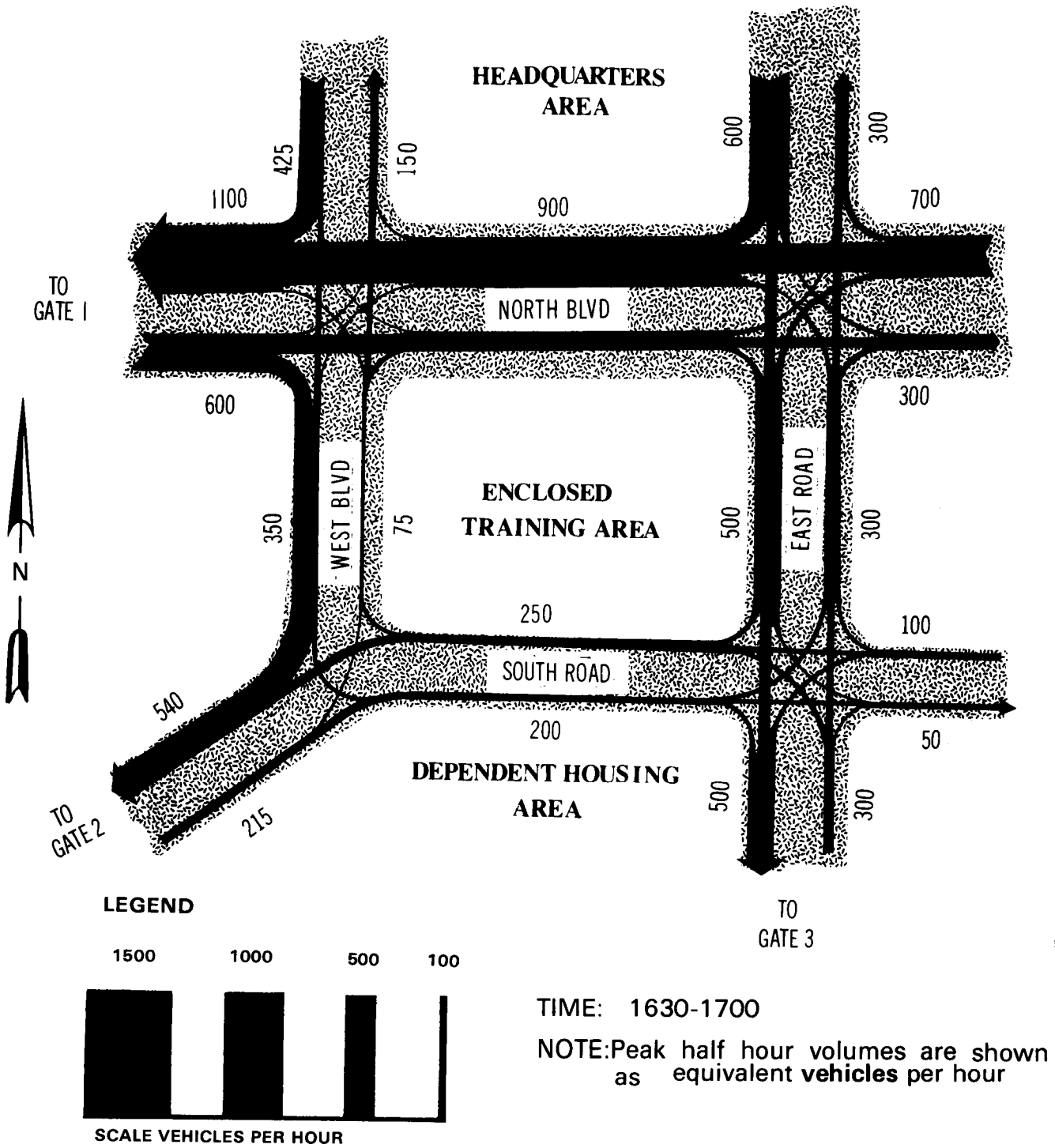
WEATHER \_\_\_\_\_ ROAD SURFACE CONDITION \_\_\_\_\_

Time starts M	From north on St.			From south on St.			From west on St.			From east on St.			Half hour total
	L	S	R	L	S	R	L	S	R	L	S	R	
0700-0730													
0730-0800													
0800-0830													
0830-0900													
0900-0930													
0930-1000													
1000-1030													
1030-1100													
1100-1130													
1130-1200													
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2030-2100													
2100-2130													
2130-2200													
2200-2230													
2230-2300													
2300-2330													
2330-2400													
Total													
Total													

Compiled by \_\_\_\_\_

R—Right turn.  
L—Left turn.  
S—Straight ahead.

*Motor Vehicle Volume Summary Sheet*



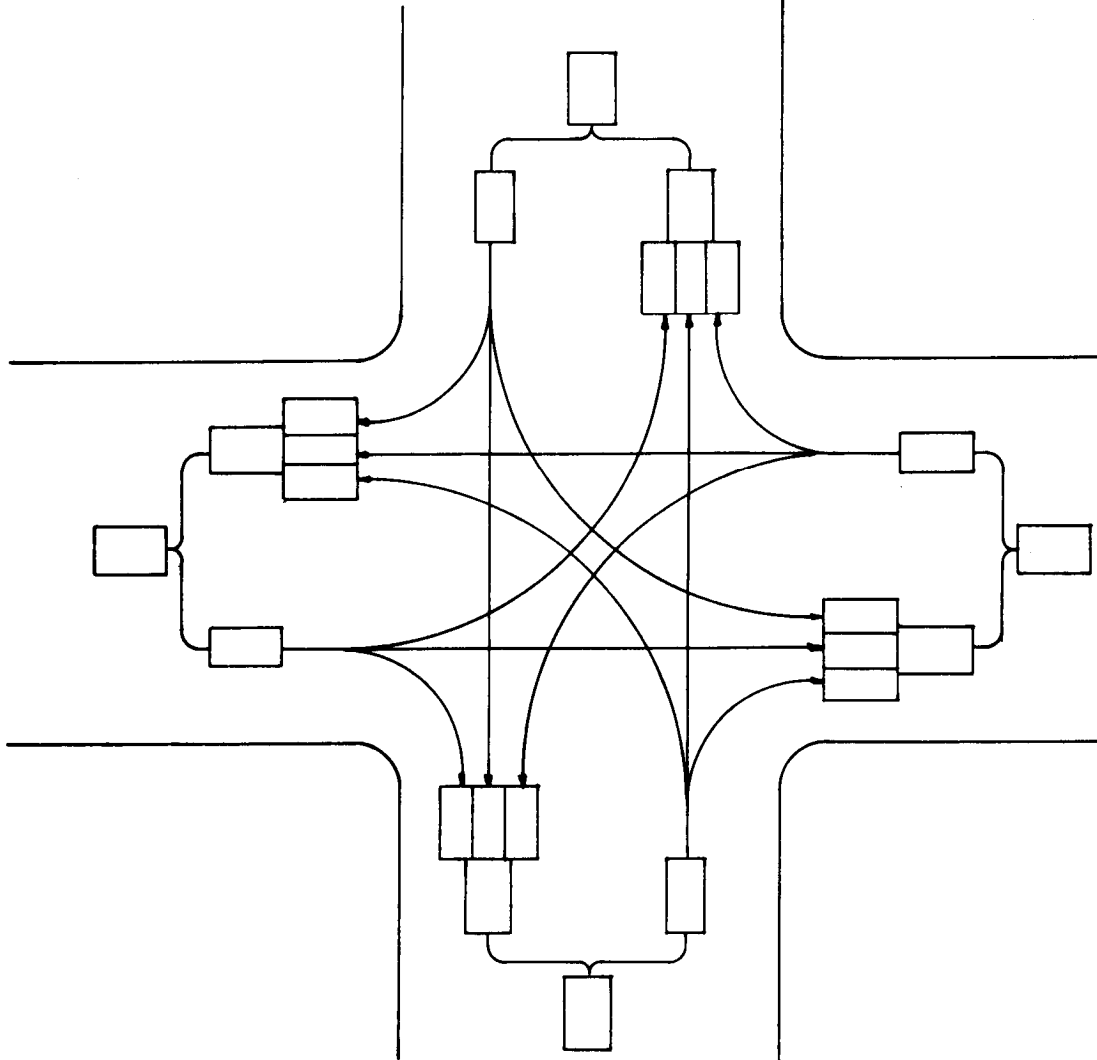
*Route Volume Graph*

The graphic summary sheet (page 147) is used to indicate the number of vehicles counted and their directional movements during a desired time period.

The route volume graph above is another method of graphically indicating information obtained in this study. The thickness of the bands are related to the traffic volume during a specific period.

LOCATION \_\_\_\_\_ DATE \_\_\_\_\_  
TIME \_\_\_\_\_ HOURS FROM \_\_\_\_\_  
\_\_\_\_\_ TO \_\_\_\_\_  
\_\_\_\_\_ TO \_\_\_\_\_  
WEATHER \_\_\_\_\_  
ROAD SURFACE CONDITION \_\_\_\_\_  
COMPILED BY \_\_\_\_\_

INDICATE NORTH BY ARROW



REMARKS & RECOMMENDATIONS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Vehicle Volume Graphic Summary Sheet*

pavement markings, or Military Police on traffic control duty at various locations and times.

## Uses

The information gathered in a motor vehicle count may be used to:

Study traffic control devices and their effectiveness. The study may justify the existence or need for fixed-time or traffic-actuated signals, the need for stop signs, speed zones,

Study and evaluate the number of accidents based on volume and directional movement. Generally, special controls are needed if 300 out of 1,000 vehicles make a left turn at an intersection. The need for street lighting and signals can be considered by comparing day and night traffic volume to day and night accident frequency.

Study future needs such as through streets, secondary roads or roadway improvements.



## Roadway Capacity Studies

**S**tudies of roadways are used to determine the practical capacity of roads and streets; to provide a basis for changing traffic regulations, establish priorities for street improvement; and to assist in future planning.

**Traffic density** is the number of vehicles per hour passing any selected point on a road, or the number of vehicles per mile on a selected portion of road.

**Traffic capacity** is the maximum traffic density a road can accommodate at a given speed without delay.

Before the actual capacity of a roadway can be determined, it is necessary to find the **theoretical capacity**. The formula  $N = 1760V$  divided by  $I$  is

used for finding the theoretical capacity for one lane of a roadway. (See the formula explanation on page 150.)

An ideal road is one which has an excellent surface, zero grade, zero curves and no interference such as intersections. There are, however, no ideal roads. The theoretical capacity of a road is modified to account for existing circumstances. Three factors determine the **actual capacity of a road—physical characteristics of the road, characteristics of the traffic using the road and traffic controls used on the road.**

**A good rule of thumb to use when estimating the actual capacity of a road is to reduce the theoretical capacity by 25 percent.**

If a more detailed analysis of a roadway's capacity is needed, the assistance of a traffic engineer is required, since the study and computation of factors affecting capacity is detailed.

The capacity of a roadway can be improved in these ways:

Eliminate curb parking or convert angle

parking to parallel parking, if on-street parking is essential.

Eliminate left and right turns.

Properly define lanes.

Relocate bus stops.

Relocate objects near edges of the roadway.

Speed (km/h)	Speed (miles per hour)	Vehicles lead (Yards/meters)		Traffic density (vehicles per miles/km)	Traffic flow (vehicles per hour)
8	5	17	15	103	518
16	10	22	20	80	800
24	15	28	26	63	941
32	20	36	32	49	976
40	25	44	40	40	1,000
48	30	53	48	33	995
55	35	62	56	28	994
6472	40	70	62	25	1,006
	45	79	71	22	1,003

*Theoretical Traffic Capacities for Single-Lane Movements*

$$N = \frac{1760V}{I}$$

**N**— Theoretical traffic capacity, expressed in vehicles per hour.

**V**— Constant vehicular speed, expressed in miles per hour.

**I**— Intervehicular lead, expressed in yards. (Intervehicular lead is defined as the distance from the front of one vehicle to the front of the next vehicle in the traffic column.)



## Accident Records Studies

The **purpose** of studying traffic accident records is to find measures to **increase vehicle safety and reduce the frequency of accidents**. Traffic accident prevention programs are never completed. They should be a continuous study of accidents, violations, vehicle registrations and remedial actions taken. The study of records assists in the following areas:

- Identifying high accident rate locations, and taking corrective action.
- Evaluating roadway design factors.
- Planning remedial actions and selective enforcement programs.
- Evaluating these actions and their effectiveness through before and after comparisons.

The **validity** of any analysis **depends on the accuracy** of the raw information which is ob-

tained. This is particularly important when studying causes of accidents. Accidents occur because of a variety of factors in complex combinations. For this reason, the terms "following too closely" or "speed excessive for conditions," for example, are often insufficient to provide for valid analysis.

Records under review must be accurate and detailed. Department of the Army is currently developing the Army Information Management System (AIMS) which uses automated data processing procedures.

A part of this system will be the Military Police Management Information System (MPMIS) and the Law Enforcement Reporting System (LERS). LERS will include subsystems on vehicle registration, offenses, traffic accidents and traffic violations. When implemented, these subsystems will greatly improve storage, retrieval and analysis of data for use by traffic managers.



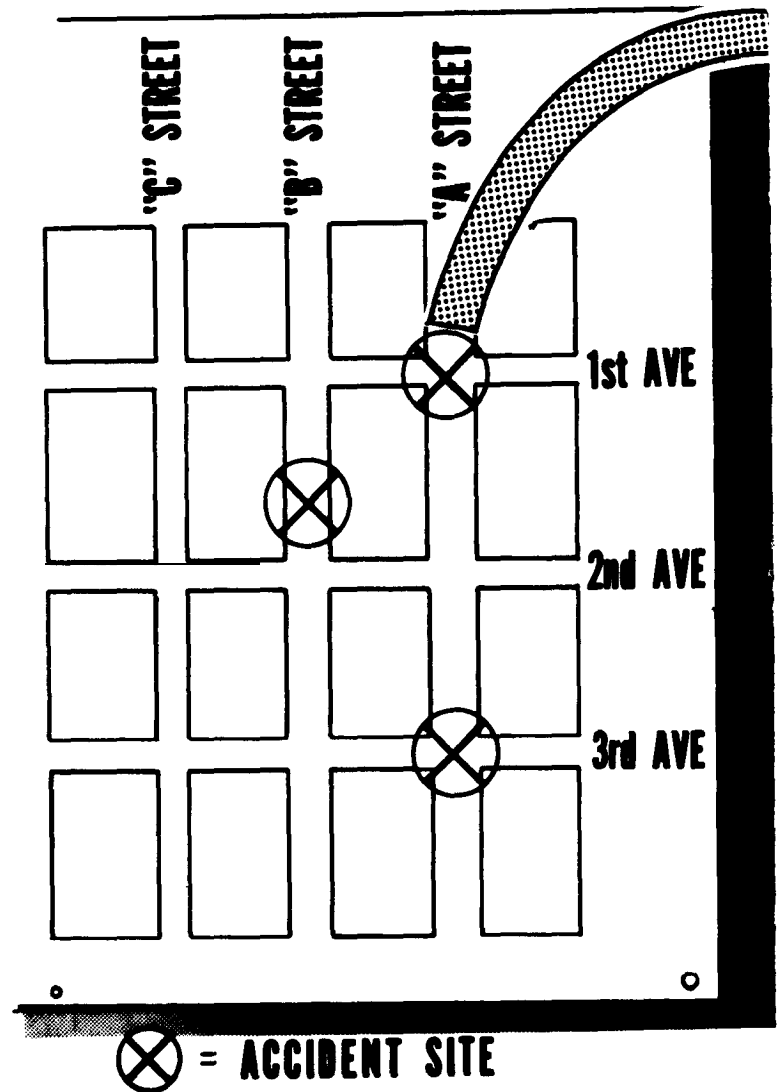
There are **six basic steps** in the study of accidents at a location. These require specific attention.

- ▶ Obtain sufficient accident data.
- ▶ Select high accident rate locations.
- ▶ Prepare collision and condition diagrams.
- ▶ Make field observations at the location during the time of accidents.
- ▶ Summarize facts.
- ▶ Analyze facts and field data, and recommend corrective actions.

## Obtaining Data

The following information should be obtained when studying accidents:

- Location
  - Day
  - Month
  - Year
  - Hour
  - Cause
  - Type
- 
- Light conditions
  - Weather conditions
  - Driver
  - Driver's age
  - Driver's sex
  - Driver's experience
  - Seat belt usage
  - Command/Unit

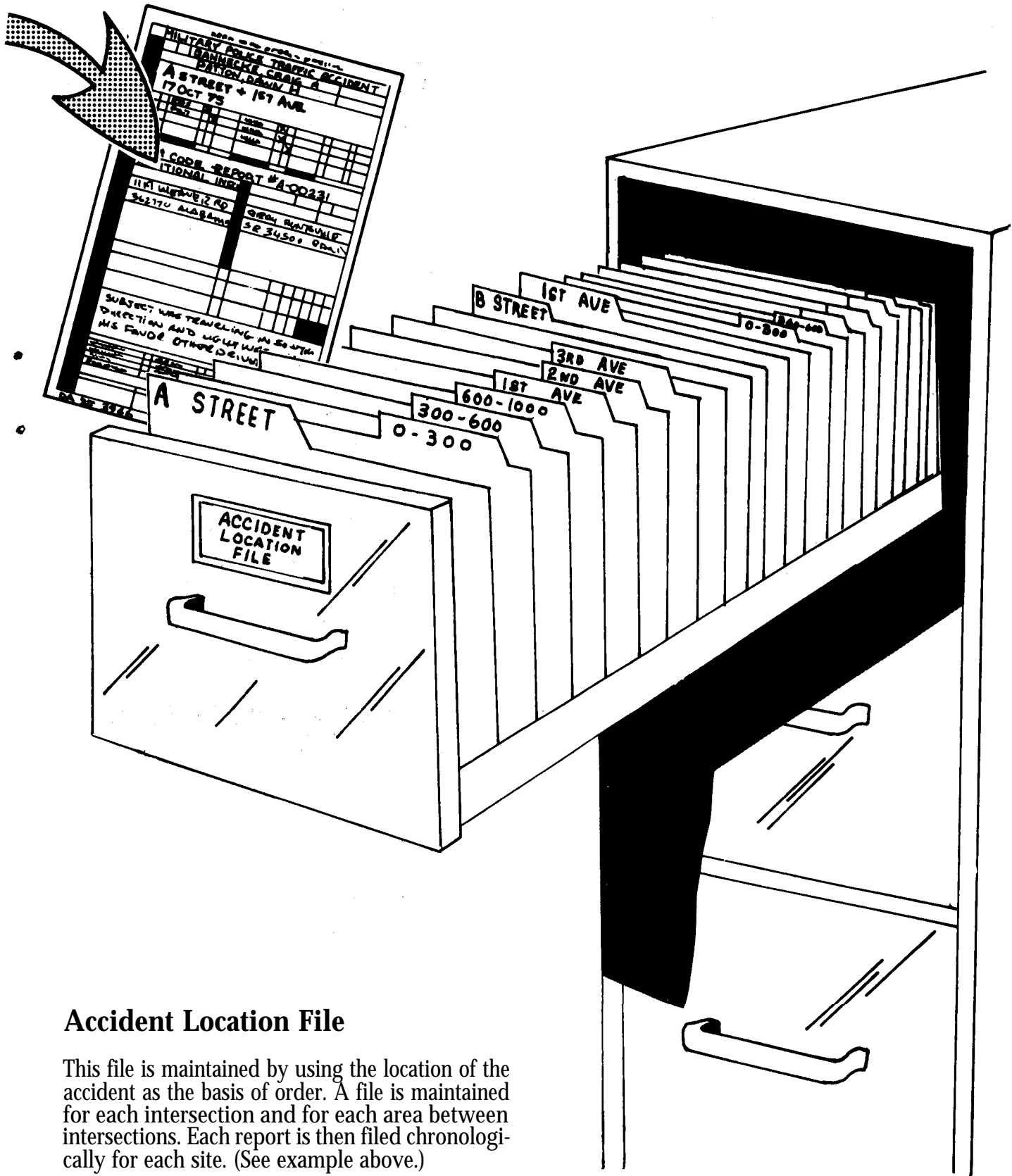


Accident Location File Index

- Traffic controls
- Injuries/fatalities.

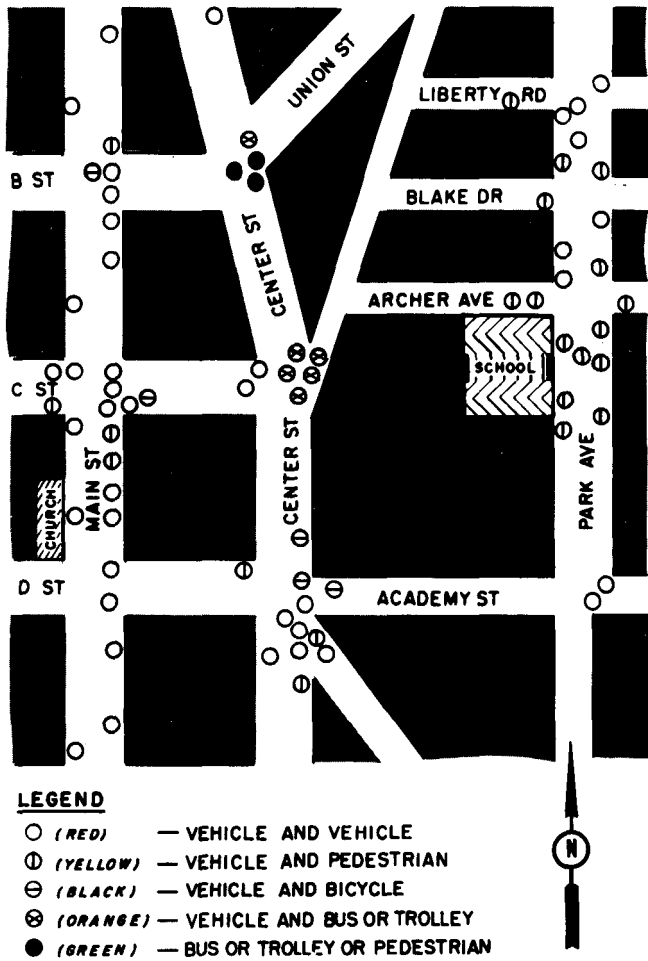
## Selecting Locations

The two methods of determining accident locations through manual storage methods are **accident location files** and **spot maps**.



### Accident Location File

This file is maintained by using the location of the accident as the basis of order. A file is maintained for each intersection and for each area between intersections. Each report is then filed chronologically for each site. (See example above.)



Sample Spot Map

## Spot Maps

Spot maps are designed to show the complete roadnet on an installation, or any specific part of the roadnet. The traffic section posts accident locations on the map by using different colored map pins. Color of the pins can be used to represent different factors. Maps should be large enough for easy visibility. By reviewing these maps, high accident locations can be seen. In addition, if the map is made available to MPs preparing for patrol, it can act as a briefing and prevention aid. At the end of each year, maps should be photographed in color and filed for future reference and comparison with current maps.

## Graphs and Charts

Line graphs and bar charts are useful in interpreting traffic data between two or more sets of information, such as the relationship between personal injury and apprehensions for moving vehicle violations.

## Collision Diagrams

A collision diagram permits study and analysis of a particular intersection or curve at which a number of accidents have occurred. The diagram consists of an outline map of the location and symbols showing the direction of movement of vehicles and pedestrians involved in accidents. If stationary objects are important in accidents, they are included in the diagram. Each diagram should include:

- Drawing of intersection.
- Identification of diagram.
- Identification of streets.

Plots of accidents to include:

- Direction of travel.
- Date of accident.
- Time.
- Road conditions.
- Weather conditions.
- Any unusual conditions (flood, storm, intoxication, etc.).

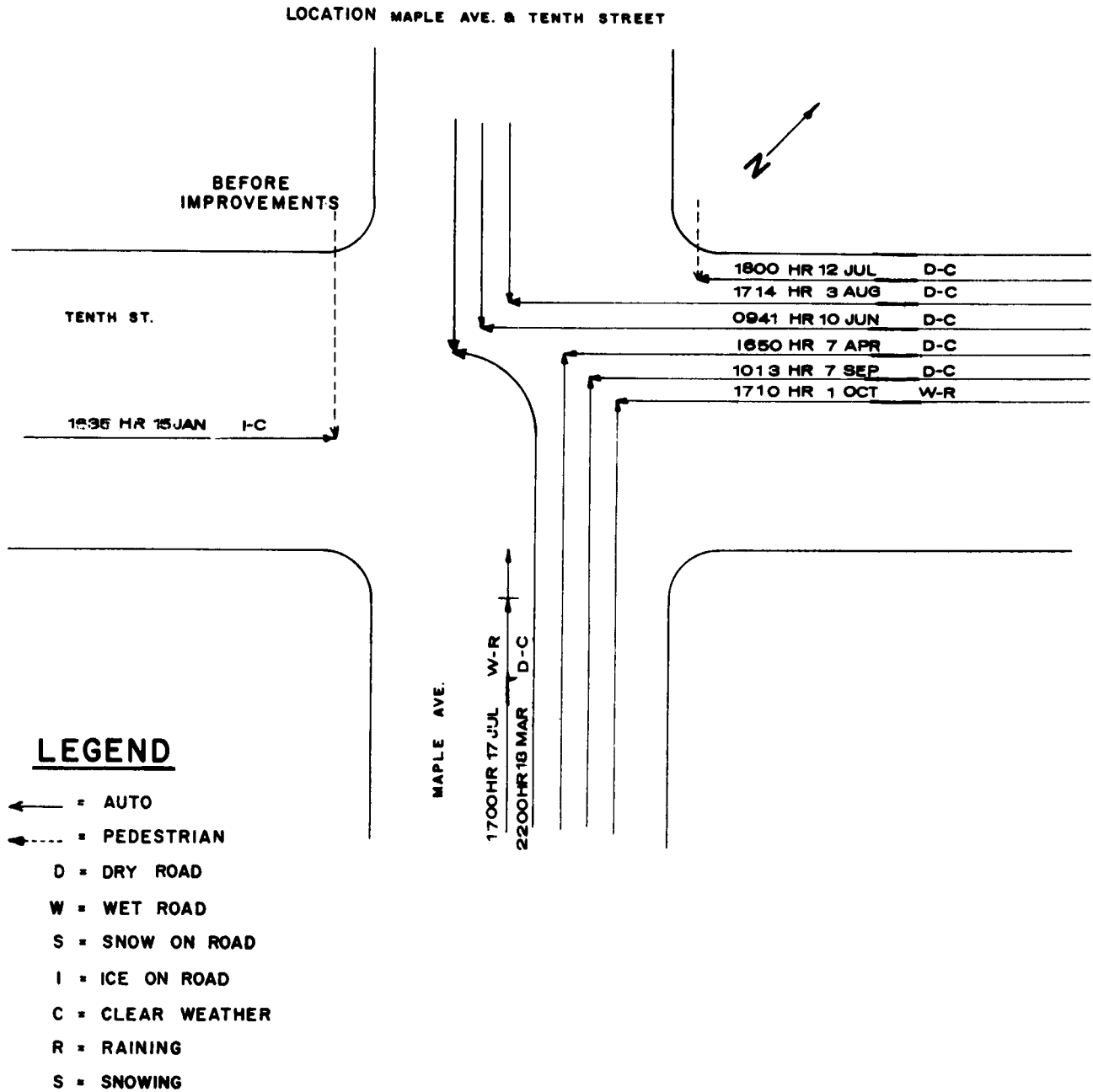
Care should be taken to insure the diagram does not show different sets of circumstances affecting the scene, such as one diagram showing an intersection before and after a stop sign has been installed.

After a diagram has been prepared, make a search for **points of similarity**. These may be:

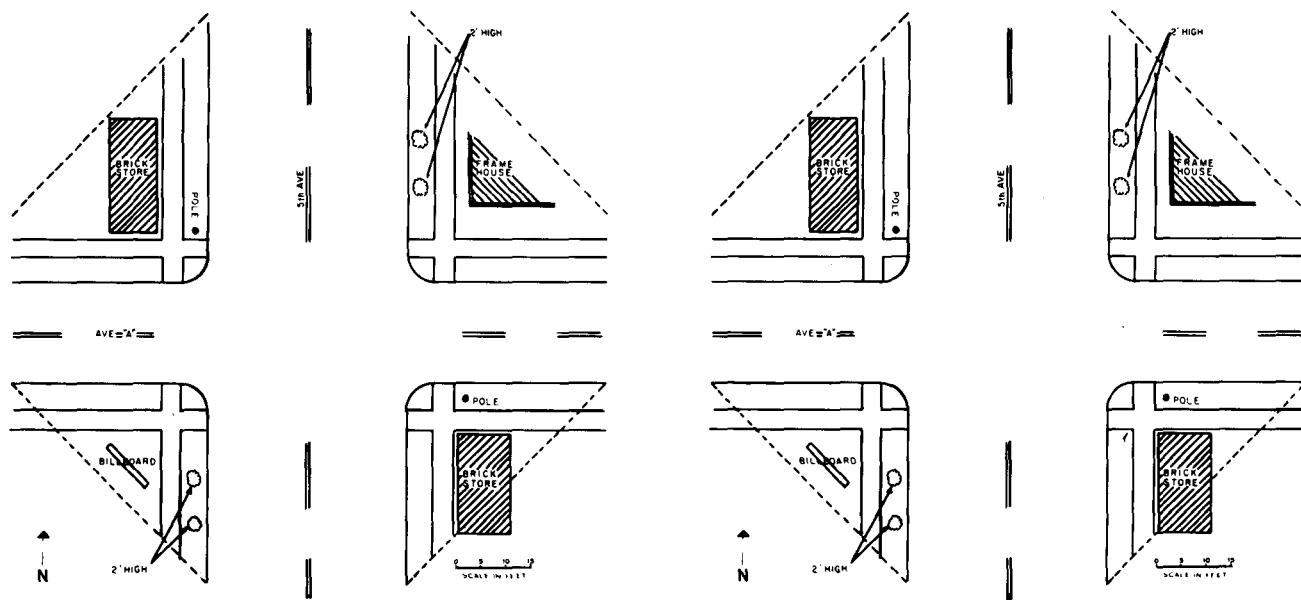
- All accident cars coming from the same direction.

- Colliding cars coming from the same directions such as northbound and eastbound.

- Accidents of one type, such as cars turning left.



*Collision Diagram*



*Condition Diagram*

Accidents occurring during one season of the year.

Accidents occurring at a certain time of day or during certain lighting conditions.

Accidents occurring under the same weather conditions.

When points of similarity are determined, an investigation at the site should be made to confirm these facts. A sample collision diagram is on page 155.

## Condition Diagrams

A condition diagram is a scale drawing which provides an accurate picture of the physical conditions present at the location under study. From this diagram the required visibility distance for the 85th percentile speed (see Chapter 22, Speed Studies) on the road, and the actual visibility triangle can be made. This will allow an evaluation of the effects obstructions have on the driver's view and road conditions.

A rough sketch of the location should be made at the scene and later transferred to an 8½ x 11-inch sheet of paper. A scale of 30 to 40 feet per inch should be used. Observations and measurements should include:

- Curbs
- Roadway limits

- Property lines
- Sidewalks
- Driveways
- View obstructions on corners
- Physical obstructions on roadway
- Ditches
- Bridges
- Traffic signals
- Signs
- Pavement marking
- Streetlights
- Grades
- Road surface
- Type of adjacent property
- Irregularities (potholes, dips, etc.)

Condition diagrams may indicate view obstructions are contributory causes of accidents. A driver proceeding at normal speed on one street should be able to see another vehicle approaching at normal speed from an intersecting street. Obstructions reduce this ability.

A driver should have the time and visibility to react and brake a vehicle. Any obstructions increase stopping distances.

The figure above is a sample condition diagram. The dotted lines represent the required visibility triangle; while the shaded portions show the actual visibility triangle.

## Field Observations

Preparation of a condition diagram can be made in conjunction with making afield observation of the accident location. Reenactment of a collision can be made. The field observation should be made under the same weather and light conditions indicated as being present during most of the traffic accidents.

## Analyzing and Summarizing

Facts gathered from accident studies should be presented in understandable and meaningful terms. This will help justify any recommendations made. In analysis, use the **repetitive principle of collisions**. This suggests that if certain conditions or combinations of conditions influence driver, vehicle, roadway, or control, an accident may occur. In other words, past performance is used to predict future events.

It has also been found that there is an inverse relationship between violations, citations and accidents. As proper traffic citations increase, accidents decrease. A useful tool in showing this is the **enforcement index (EI)**. This is the ratio of all moving traffic violations divided by the number of accidents. This index may then be used to show fluctuations by day, week, or month, and enable adjustments to enforcement programs.

## Recommendations

After the study is completed, recommendations for improvements should be made. These recommendations may include increased vehicle inspection standards, safety programs, education programs or changes in police operational procedures. Communication of the information derived from these studies is important. It is valuable to various staff offices and to the public. A traffic enforcement bulletin may be used to communicate this information to Military Police. This bulletin should list locations having the greatest hazards, causes, and times of accidents.





## Parking Studies

**P**arking studies are performed to determine location, use and adequacy of existing parking facilities. Information can also be gathered for planning parking facilities. Normally, studies are concerned with specific problem areas and are made in an effort to improve efficiency and safety. They may be performed with origin-destination and vehicle registration studies.

Parking facilities are either permanent or temporary. Permanent parking facilities are an integral part of installation traffic and building plans. They may be either on-street or off-street parking. Temporary parking areas are established by Military Police to service a particular event or occasion.

Some situations may indicate a problem in

permanent parking facilities. Such situations are:

- Excessive, illegal and overtime parking.
- Excessive cruising to find a parking space.
- Extensive congestion in the traffic flow caused by cars attempting to find a parking space.
- Parking in excess of 400 feet (120m) from the desired destination of the vehicle occupants.

### Types

There are three types of parking studies:

- Inventories
- Usage
- Facility service



## Inventories

A parking inventory is a physical count of existing parking spaces. It includes on- and off-street parking. For marked spaces, a numerical count is made. For unmarked spaces, a rolling measuring device is used to make an accurate estimate of the number of possible spaces. For angle parking, an area 9 feet (3 meters) wide and 18 to 20 feet (5 to 6 meters) long is a normal space. For parallel parking, an area 18 to 20 feet wide is normal. The forms shown in the following two figures can be used to record information concerning this study:

## Usage Studies

Usage is a significant measure of parking adequacy. It is based on the number of vehicles in a

specific area and the length of time vehicles are parked in the area. The survey is conducted during normal duty hours or during maximum usage hours for special activities such as the exchange or commissary. One person should be able to check each parking space in an area—once during a 15-minute period for on-street parking, and once during a 30-minute period for off-street parking. One observer can check about 60 curb spaces in 15 minutes. The observer should walk a predetermined course and record on a field sheet the license plate or decal numbers of vehicles. The form on page 161 is a sample field sheet used in such studies.

The same route is used at intervals of 15 to 30 minutes. Check marks indicate a car is in the same location noted on previous trips. The letter "E" indicates an empty space and the letter "R" indicates a reserved space. When the survey is completed, each line is read horizontally to determine the time a vehicle occupied a particular space, or the use of that particular space during the survey. The data is then summarized on the summary sheet (page 162).

<b>BLOCK NO.</b> _____			
<p>Sketch Block above and identify boundary streets.</p> <p>List the following on each block face:</p> <ol style="list-style-type: none"> <li>1. No. of available parking spaces.</li> <li>2. Angle parking <span style="margin-left: 100px;">90°</span> <span style="margin-left: 100px;">60°</span> <span style="margin-left: 100px;">45° If applicable.</span></li> <li>3. No. parking zones</li> <li>4. Time limit zones.</li> <li>5. Driveways</li> </ol>			
DATE _____		RECORDER _____	

*Parking Inventory Field Sheet for On-Street Parking*

Location \_\_\_\_\_ of \_\_\_\_\_ Street  
 From \_\_\_\_\_ to \_\_\_\_\_  
 Weather \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_  
 Record Starting Time of Each Roundtrip at Top of each Column Below


*Parking Usage Field Sheet*

1. LOT NO. \_\_\_\_\_  
 2. Facility served: \_\_\_\_\_  
 3. Ground area covered \_\_\_\_\_ sq. ft.  
 4. No. of vehicle stalls \_\_\_\_\_  
 5. Parking time limits.  
 6. Parking surface \_\_\_\_\_ Condition \_\_\_\_\_  
 7. Stall marking details: \_\_\_\_\_  
 \_\_\_\_\_ 90° \_\_\_\_\_ 60° \_\_\_\_\_ 45° Other \_\_\_\_\_  
 Width of stall \_\_\_\_\_  
 Depth of stall \_\_\_\_\_  
 8. Sketch lot on reverse side of this sheet showing—  
 (a) Outside dimensions of parking area.  
 (b) Location and dimensions of entrances and exits.  
 (c) Aisle widths.  
 (d) Circulation pattern.  
 (e) Layout of stalls showing number of stalls in each row.  
 DATE \_\_\_\_\_ RECORDER \_\_\_\_\_

*Parking Inventory Field Sheet for Off-Street Parking*



Each questionnaire should identify the space the vehicle occupied. This study can be used with an origin-destination study.

## Facilities Parking Service

This study is of a parking area which services a particular facility or building. A questionnaire, such as the one below, is used. The study can be done at the scene when the driver parks his vehicle or by placing the questionnaire under the windshield wiper blade and requesting it be returned.

## Uses

Parking inventories are useful in determining geographical distribution of parking areas on an installation. They are also useful in determining the capacity of each parking area.

**Parking Questionnaire**

Date \_\_\_\_\_

Parking Space \_\_\_\_\_

1. What was the origin of the trip?

( ) Offpost. Entered Gate No. \_\_\_\_\_ .

( ) On-post. Departed \_\_\_\_\_  
(Bldg number, unit or activity)

2. What is immediate destination? \_\_\_\_\_

3. What is purpose of trip?

( ) Employment	( ) Shopping
( ) Official trip	( ) Eat
( ) Personal errand	( ) Recreation
( ) Other _____	

4. Parking Times

In \_\_\_\_\_ hours.

Out \_\_\_\_\_ hours.

5. Type of vehicle

( ) POV

( ) Military commercial vehicle

( ) Military tactical vehicle

( ) Trucks

( ) Taxi

6. How often is this parking area used? \_\_\_\_\_

7. Suggestions (if any) for improvement of parking. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*Sample Questionnaire for Facilities Parking Service Study*

**Parking usage surveys** are useful in determining areas with the **greatest parking demand** and where parking problems are critical due to inadequate capacity. They are helpful in identifying areas where **time limits** are **not consistent with usage**. This further aids in determining whether enforcement efforts should be lessened or increased. They **evaluate efficiency** of parking areas. An efficiency of 85 percent is considered

maximum in short-time parking areas and 95 percent is maximum in long-time parking areas.

**Parking facility service studies** are useful in determining if parking lots are **properly located** and are the **proper size** for the area served. They also assist in determining needs when planning new or relocated facilities.



## Associated Studies

### Vehicle Registration Studies

Information for these studies is gathered from DA Forms 3626, Vehicle Registration and Driver Record. By using ADP procedures and coding the residence of drivers and their actual places of duty, a readout of traffic volume and traffic patterns may be determined. This information can then be shown on maps and bar graphs. The information may be used to accomplish the following

Review duty hours and compare with traffic volume and patterns. Adjusted duty hours may be recommended based on the findings.

Update origin-destination study.

Assist in planning parking requirements.

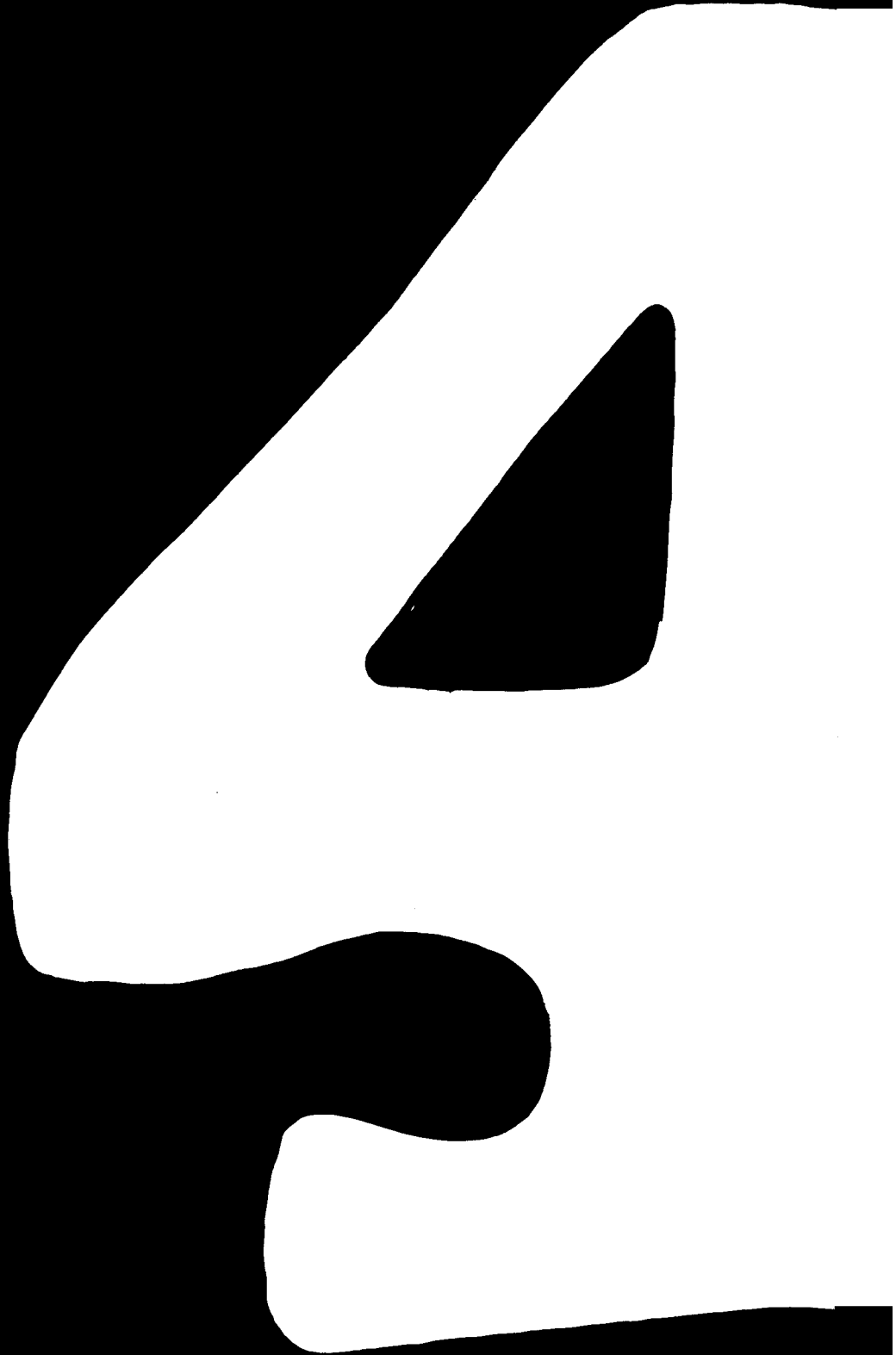
Identify stolen, abandoned or recovered vehicles.

Identify vehicles by year, make, model, color, license number, ownership, etc.

### Transit Checks

These studies involve counting persons using or desiring transit systems. Each study is then used to improve, adjust, start or end such systems. Transit companies may contribute information concerning these studies (such as loading and unloading points, time and day of week and military/civilian users).











## Responsibilities

Circulation control is all measures taken to expedite and control the movement of personnel and vehicles throughout the theater of operations. Measures include control of vehicle movements, refugee control and straggler control.

Military Police units assigned to divisions, corps, COMMZ and theater army have responsibility for circulation control of vehicles, supplies and personnel throughout their respective areas of operation. Planning for this control begins at the highway traffic headquarters (HTH) under staff supervision of the Assistant Chief of Staff, Transportation. The HTH is supervised by the highway plans officer with representation from various staff agencies, including the provost marshal.

The functions of the highway traffic headquarters are:

- Formulating the overall highway regulation plan and traffic circulation plan.

- Maintaining a situation map of the military road network, showing current data on obstructions, detours, defiles, enemy activity, capacity and surface conditions.

- Implementing the commander's established priorities for highway movement.

- Receiving requests for highway routing and for schedules of movements, consolidating itineraries and road movement tables.

- Establishing and issuing traffic circulation maps.

- Making necessary changes in routings, schedules and priorities as required.

- Coordinating scheduled traffic movements with higher, adjacent and lower headquarters.

Establishing procedures for reporting road construction or repair requirements.

After the traffic circulation plan has been issued, responsibility for control of traffic rests with subordinate commanders. These commanders look to the provost marshal and Military Police units to assist in this control.

The provost marshal provides circulation control of traffic along with other circulation control missions primarily in two ways—through use of **circulation control points (CCPs) and mobile patrols.** This section discusses how these circulation control missions are completed. The missions include:

- Planning for circulation control of traffic.
- Circulation control points and mobile patrols.
- Checkpoints, roadblocks, dismount points and defiles.
- Hasty route reconnaissance.
- Escorts.
- MP combat support to special operations.

Military Police assigned the circulation control mission use the same principles of traffic control discussed in Section 1 of this manual with modifications based on the tactical combat situation. Military Police operating circulation control points assume several other important missions in the conduct of their duties. These are:

- Circulation control of traffic**
- Straggler/refugee control**
- Information dissemination**
- Intelligence gathering**
- Security**

## Planning

Responsibility for planning and regulation of vehicle circulation control is charged to the transportation officer of the command having area responsibility. Traffic regulations are then

implemented through traffic control plans developed by the Military Police. MP planners (provost marshal, company commander, platoon leader or squad leader) must develop support plans with the express intent of best supporting the area commander's concept of operation. This concept is the commander's intentions concerning force deployment and support. It describes the overall pattern of an operation.

Planning for MP support activities must be a continuous process of evaluating current operations and anticipating future courses of action. Planning for circulation control of traffic requires consideration of scheduled and unscheduled, military and civilian movements. Planning includes consideration of several variable factors that can affect vehicle movement (such as type of vehicles, available Military Police resources, environmental conditions, terrain, support or augmentation capabilities, and enemy activities).

FM 19-4, *Military Police Support, Theater of Operations*, discusses in detail all aspects of Military Police planning for MP support missions to include circulation control.

Chapters 29 through 32 of this manual provide specific guidance on planning for a given mission of circulation control and various methods of implementing this mission.

## Specific Planning

When planning for employment of a unit, standard planning and organizing procedures should be used. The MP planner must first analyze the mission, and then make an estimate of the situation.

Use the key word "METT" in your estimating:

**Mission**– What job is to be done? The leader should determine the who, what, where, when, why and how.

**Enemy**– Intelligence reports and predictions concerning enemy capability and actions must be considered.

**Terrain**– What are the primary roads? The MSRs? The secondary roads and holding

areas? How does the terrain influence your actions? Your security? And the enemy's actions? Consider the key word "OCOKA":

- O- Observation and fields of fire
- C- Cover and concealment
- O- Obstacles
- K— Key terrain features
- A— Avenues of approach

**Troops**— What and how many MPs are available to do the job? Do they have the necessary equipment? Are they properly trained?

After the MP planner makes an estimate of the situation, an operation order is issued to personnel performing the mission. Depending on available time, this may be a written order, verbal order or a combination of both. All Military Police involved in the mission must receive this information if a task is to be successfully accomplished.

Information should be presented in an **operations order format**:

**1. Situation**— Always give information in the following three subparagraphs:

- a. **Enemy Forces**—How will enemy activity affect the MP support mission? What is their strength, location and anticipated activity?
- b. **Friendly Forces**—Give information on friendly forces other than the specific MP unit and how its operations may affect the MP mission.
- c. **Attachments and Detachments**—List any supporting units concerning Military Police operations.

**2. Mission**— A clear, concise statement of the task to be accomplished, explaining who, what, when, where and why.

**3. Execution**

a. **Concept of Operation**—A statement of the tactical plan concerning MP support.

b. Subsequent paragraphs should detail specific tasks for each MP element concerned. These should tell each person, if necessary, what and how he will perform his part of the mission.

**4. Service Support**— This paragraph should contain subparagraphs concerning administrative and logistics support.

- a. **Administration**—What actions should be taken for situations not directly part of the mission? What are the contingency plans for handling PW or emergency reroutings?
- b. **Logistics**—What, where and how will Military Police receive logistic support such as resupply, maintenance, water and food?

**5. Command and Signal**

- a. **Signal**—What are the frequencies, call signs and authentication procedures for communication? How will MPs communicate with supported and supporting units? What are the emergency frequencies?
- b. **Command**—Where will leaders be located? What is the chain of command?

## Circulation Control Point

The functions of a circulation control point (CCP) are to provide the following:

● **Circulation Control of Traffic**— Military Police must be familiar with the traffic circulation plan and traffic control plan of all scheduled military movements. MPs insure these movements obtain priority use of the road network. CCPs prevent delays and congestion; enforce rules and regulations of the commander concerning road use; make adjustments for unscheduled road movements; and are prepared to make minor reroutings as necessary. CCPs must be aware of the major supply routes (MSRs). Combined overlays for maps are useful in this procedure. MPs must maintain surveillance of traffic movements and report to higher headquarters any problems that arise.

● **Straggler/Refugee Control**— Contingency plans should be made for handling and control of refugees and stragglers. During conventional warfare or in a nuclear environment, this can become a severe problem; since mass movements will normally take place on natural lines of drift, which are usually the MSRs. Masses of refugees tend to obstruct the flow of traffic, which increases



### **CIRCULATION CONTROL POINT FUNCTIONS**

**Camouflage, concealment and cover must be considered when a tactical control point is developed.**



**ROUTE SECURITY**

**STRAGGLER CONTROL**

**INFORMATION POINT**

**CIRCULATION CONTROL OF VEHICLE MOVEMENT**

the importance of the MP mission to keep the roads open. Control and screening of refugees (who are sometimes used to insert enemy agents) requires a close coordinated effort with the G2/S2 and the supporting military intelligence unit. Additionally, control points, PW collection points, screening points, civilian detention centers, and refugee centers should be coordinated with MI and CA units.

● **Intelligence Gathering-** The MP, like any other soldier, must be aware of the importance of gathering intelligence and passing his observations to the unit security officer if immediate contact with military intelligence is impractical. All vehicle movements should be reported, as well as the activities of local inhabitants, and all unusual occurrences observed. Counterintelligence must be emphasized. MPs should not allow authorized personnel to observe traffic movements.

● **Information Dissemination-** Military Police must be able to give information concerning road use, directions, enemy activity, air or NBC threats to all personnel using the road network. To do this, they must be well briefed and have communication with other CCPs, mobile patrols and their parent unit.

● **Security-** MPs have a very important security mission. They must be able to secure themselves and their position(s). This is done by establishing their position at a location with cover and concealment, good fields of fire and communication. They must be ready to provide a temporary delay or withstand enemy attack. Often, due to their isolated position, they will be the first in the warning system for air, ground or NBC attack.

The number of personnel and amount of equipment needed at any one control point depends on the location, time of operation, enemy activity and actual importance of the point. This may vary greatly, from one or two MPs needed for only 10 minutes, to four or more MPs needed for an extended period.

A control point based on a semipermanent operation (24 hours for example) might require four Military Police. Their jobs are as follows:

**Senior MP**— Provide leadership and maintain communication.

- ▶ 2d MP—Provide direction on the roadway.
- ▶ 3d MP—Provide direction on the roadway.
- ▶ 4th MP—Provide backup security and rest.

They should have sufficient equipment to accomplish the mission. In addition to a vehicle, weapons and communication equipment, they should have traffic control signs, NBC warning signs, STANO equipment, and sufficient food and water. Plans should be made for resupply by the parent unit. MPs must be cross trained in the use of crew-served weapons for employment during enemy activity.

## Mobile Patrol

Military Police mobile patrols (ground, air or water) provide the commander with a versatile tool to maintain traffic control and other missions requiring mobility. Mobile patrols have the same mission capability as a CCP on the ground. Due to their increased mobility, they may also be used for the following functions:

Maintain contact between circulation control points (CCPs).

Investigate accidents and incidents.

Perform route reconnaissance and surveillance missions.

Perform checkpoint, roadblock and defile missions,

Transport stragglers from CCPs to collection points.

Perform resupply and administrative duties from the unit to the CCPs.

Clear MSR of refugees.

## Methods

### **Area Patrol (Unprogrammed)**

The patrol is given a specific area to patrol, without directions as to routes used, times or checks to be made.

### **Area Patrol (Programmed)**

The patrol is given an area to check, with specific duties concerning meeting times with other patrols and CCPs, and directions to perform specific jobs at certain times.

### **Route Patrol**

The patrol is given a specific route, usually an MSR to patrol.

### **Air Patrol**

MPs using rotary-wing aircraft can cover large areas quickly. This allows for quick observation of congestions and obstructions and allows for easy selection of bypasses. It is most efficient when used with mobile patrols on the ground.

### **Water Patrol**

MPs must use watercraft to patrol areas with numerous inland waterways and continuous boat traffic.







## Operation Methods

This section explains methods of operation for controlling traffic. These methods are:

- Holding areas
- Rerouting
- Checkpoints
- Roadblocks
- Defiles
- Dismount points
- Convoy escorts

### Holding Areas

A holding area is an area where traffic can be moved off the road to ease congestion; wait for

proper time to clear a CCP; reorganize in case of attack; or organize to attack. In selecting a holding area, MPs must consider using a location that meets the following criteria:

- ★ Offers cover, concealment and dispersion.
- ★ Is easily located, with easy entrances and exits.
- ★ Has a firm surface to withstand traffic weight and movement.
- ★ Is easy to defend.

Holding areas established by Military Police are controlled by MPs. If the area is very large, MPs should establish a control plan. An easy method is to mark the area off in several sections and assign an arbitrary letter or number to each area. If necessary, a traffic flow pattern should be established. Units are then assigned positions in the holding area based on size, number and types of vehicles.

## Rerouting

Military Police on circulation control duty must be prepared to implement minor rerouting of traffic when necessary. MPs must know the road network in the area, have the equipment necessary to make temporary signs notifying road users of the change, and prepare a strip map of the rerouting.

When time permits, all rerouting must be approved by higher headquarters, (highway traffic headquarters). However, the individual MP on a CCP can reroute traffic. Ordinarily, rerouting travel time should not exceed five (5) minutes, or eight (8) minutes if the rerouting is directed by MP platoon headquarters. If rerouting affects two or more platoons of a unit using the road, the unit commander must direct the change. If a major rerouting is required immediately, it should be accomplished and the MPs should notify their company headquarters as soon as possible, so the HTH can be informed of the rerouting.

## Checkpoints

Checkpoints are established to insure proper route use, enforce rules and regulations, prevent illegal actions or actions aiding the enemy, and to provide information.

Each checkpoint should be established so that MPs are out of view to road users. A good location is just over the crest of a hill or around the bend of a curve. The checkpoint should have an area in which vehicles can be pulled off the roadway. It should be well marked with traffic cones, signs, etc. Any necessary instructions should be posted on signs. A pursuit vehicle should be available to pursue any vehicles or persons who fail to stop, turn around or otherwise attempt to avoid the checkpoint.

## Roadblocks

Roadblocks are established in conjunction with checkpoints to channelize traffic and personnel. They are also used to close off access to certain areas or roads. To be effective, traffic entering the general area of the roadblock should not be able to avoid or skirt around it. This can be accomplished by blocking the road with vehicles, barrels, barbed wire, etc. If the roadway shoulders are open, they too should be blocked.

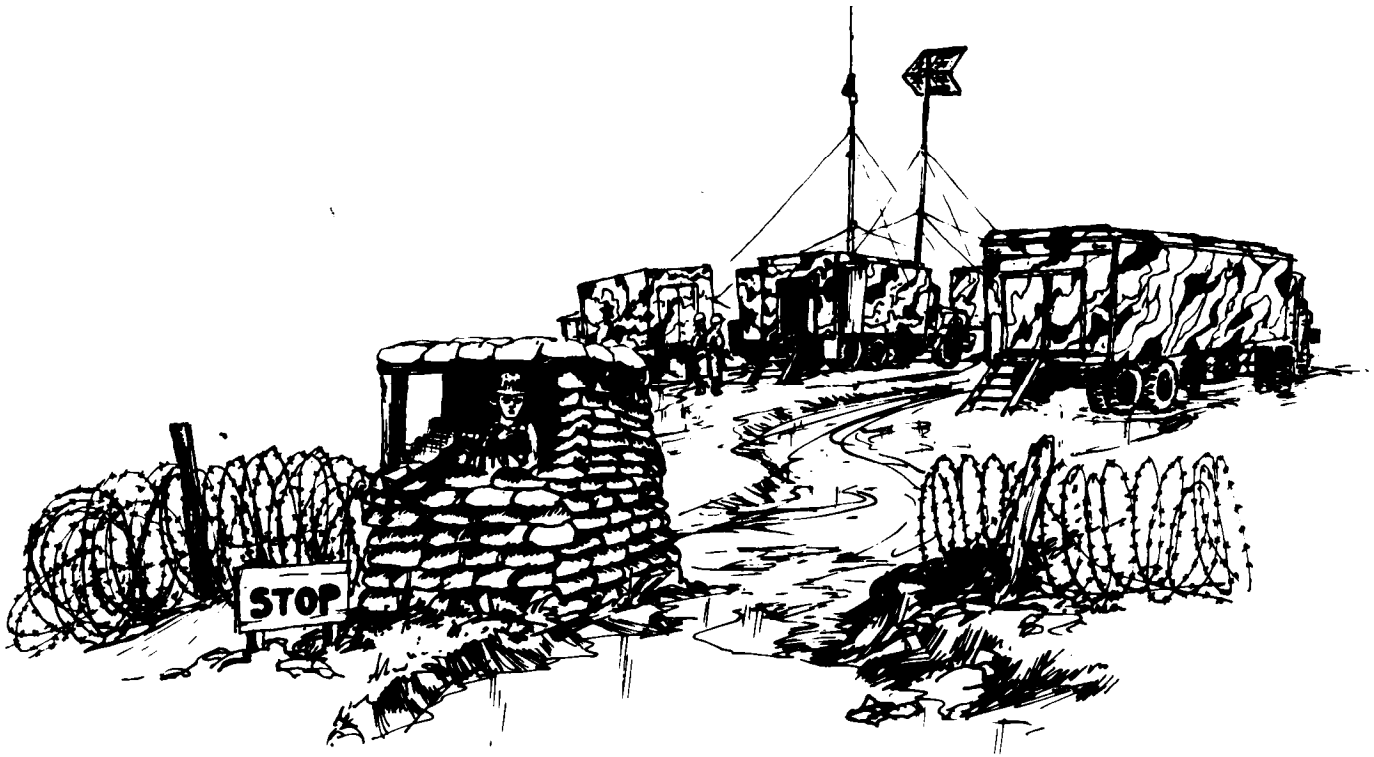
Defensive positions for MPs should be established all around the roadblock. All positions should have communications by wire and radio. Adequate weapons should be emplaced for protection and enforcement of the roadblock. A pursuit vehicle should be available for persons or vehicles crashing the roadblock.

## Defiles

A defile is a natural or man-made feature or obstacle which restricts traffic flow to one-way at a time. Examples are narrow bridges, damaged roads, excessive debris, etc. Since movement at the defile is restricted, it is an ideal opportunity for the enemy to attempt to disrupt military operations. The role of the Military Police is as follows:

- Control access to the defile to permit fastest possible clearance.
- Insure concentrations of vehicles and personnel do not enter the defile at one time.
- Provide security and defense of the position.

The **most common control method** used is to have MPs positioned at each end of the defile with a mobile patrol circulating throughout. Other methods (visual, flag, rider, lead and follow) are describe in the Installation Traffic Control Section



*Tactical Dismount Point*

(Section 1) of this manual and can be used independently or in combination.

All MP positions must be in communication with each other, preferably by wire with a radio backup. Holding areas should be established at each end of the defile to insure traffic flows smoothly and without congestion. In a situation in which nuclear or air attack is possible, these holding areas should be 2 to 3 kilometers from the defile. MPs should be prepared to assist in road clearing operations if breakdowns occur in the defile. This may mean having wrecker support available or using field expedient measures.

## Tactical Dismount Points

Tactical dismount points are areas outside of a command post (CP) perimeter where vehicular

movements are stopped and all movement is controlled. Military Police duties at these points include:

- Restrict unauthorized personnel and vehicles from entering the CP area.
- Control traffic at the main entrance to the CP area.
- Act as an information and control post to personnel seeking entry to the CP.
- Enforce light, noise, communication and movement discipline at the entrance to the CP.
- Act as part of the overall CP security team.

Certain features should be considered when selecting the location of a dismount point. The site should meet these criteria:

- ▶ Be relatively close to the CP area.

- ▶ Have a minimum of one access route.
- ▶ Be on level ground which can sustain the weight of military traffic.
- ▶ Be in an area which is minimally affected by mud or dust.
- ▶ Provide cover and concealment to vehicles parked in the area.
- ▶ Be of sufficient size to accommodate expected traffic, provide turn-around areas, and allow for dispersion.

The dismount point operation is composed of three distinct but interrelated elements:

1. Control at intersection of MSR and access route to the dismount point.
2. Control at the parking area/dismount point.
3. Control and security at the main entrance to the command post.

### Control at Intersection Of MSR and Access Route

The CP is an important control measure since it limits access to the general area of the command post. It is an information post for authorized personnel and it restricts entry of unauthorized personnel such as refugees or local inhabitants.

### Control at Dismount Point

This is where personnel are required to dismount from their vehicles and proceed by foot. Vehicles are then dispersed to appropriate parking areas. MPs at this location have two missions—traffic control and security. The Military Police conduct identification and authorization of persons desiring entry to the CP area. Since this point is normally a part of the CP perimeter security, MPs should have wire and radio communication with other security positions, and have prepared defensive positions.

### Control and Security at Entrance

Only authorized personnel are allowed to enter into the command post. The position should have authorized access lists. MPs must be able to communicate with the various staff sections to check identities and/or obtain access authorization for personnel. **No one is admitted until positive identification has been established.** Escorts are normally required for persons not on the access list. MPs must be knowledgeable of the identification system (badges, tags, etc) used during daylight and the challenge system used during darkness.

### Convoy Escort and Security

Convoy escort and security is an operation in which Military Police are detailed to provide security and movement to a specific group of vehicles. It is distinguished from route security, which is the actual control of roadway use. There are a variety of convoys which MPs may be called on to assist. They include:

- Resupply operations.
- Special ammunition or sensitive material movements.
- Escort of designated commanders and other VIPs.
- Assistance to combat arms units during difficult movements, such as passage of lines or river crossings.

The area commander (theater army, corps, division), through HTH, allocates MP resources to a convoy security mission. A primary consideration is whether or not the convoy is able to provide its own security. For example, an infantry battalion has the organic weapons to provide its own security whereas a light truck transportation battalion may not. The specific tactical situation is also a concern, particularly when rear area protection is a factor.

Military Police are committed in two ways—area-oriented and functional-oriented support.



*Convoy Escort*

### **Area-Oriented Support**

In this type support, the MP unit is committed to provide MP missions within a geographical area. A convoy would be escorted by the unit from the time it enters this area until it leaves the area.

### **Functional-Oriented Support**

In this type support, the MP unit is committed to a specific task. A convoy would be escorted by this unit from start to finish, regardless of the areas passed through.

Convoy movements are usually controlled by two

methods—organizational and area control.

### **Organizational Control**

The authority the unit commander imposes on his unit to control its movement during the time it uses a given route is organizational control.

### **Area Control**

Those measures taken by the appropriate traffic headquarters and enforced by Military Police over the road network of an assigned area are called area control.

- ▶ Provide accessibility to main routes and parking areas.

## Planning Convoy Security

Once the MP commander receives the mission to provide convoy security, an estimate of the situation should be started, using the METT system. The following should be considered when planning for a specific mission:

- Coordination
- Reconnaissance
- Method of Escort
- Tactical Actions

### Coordination

The MP leader and convoy commander must meet to coordinate their actions. Each must be aware of his own capabilities and restrictions. They should establish convoy organization and means of primary and backup communication (frequencies, call signs, etc). They must determine times and locations at which MP support begins and release points when it ends. Any anticipated changes in route must be coordinated. A typical situation might be one in which different MP units providing area-oriented support, escort one convoy as it passes through each MP unit's area of responsibility.

### Reconnaissance

Military Police should be able to conduct a hasty reconnaissance of the route to be used by the convoy. At a minimum, a map reconnaissance is necessary. All sources of information should be consulted, especially the engineers and highway traffic headquarters. Aircraft should be used if possible. Classification of the route is important.

The following are color codes used to classify roads:

**Green**— The road is generally free from enemy activity and may be used unarmed.

**Yellow**— There is a risk of enemy activity. All military personnel should be armed and each vehicle should carry at least two persons.

**Red**— This road is in the combat zone and may

require offensive or defensive action by combat troops in the field.

## Escort Methods

The Military Police planner decides the best method of escort to use. The types of escorts are the same as described in Section I, Installation Traffic Control. Considerations are terrain, persons or cargo, volume, length, enemy actions and resources available to the convoy and MPs. The methods of escorts are:

- Leading and following
- Empty truck (or modified)
- Leapfrog
- Perimeter

## Tactical Considerations

Tactical actions to be taken for security during halts or mechanical breakdowns must be established. Weapons resources must be coordinated. Location of armored vehicles and automatic weapons in the convoy organization should be mutually supporting. Prior coordination should be made with mortar, artillery and air support. All personnel in the convoy must know what action to take, in anticipation of enemy attack. Generally, convoy personnel are required to maintain local security of their vehicles, while Military Police are tasked to take offensive action against enemy attack.

**Ambush**— If an enemy ambush occurs, persons in the vehicles that have been stopped in the kill zone should dismount and begin laying down an intense base of fire. If the vehicles can move, they should immediately attempt to clear the kill zone. All personnel outside the kill zone should dismount and also lay down a base of fire. This action should be immediate and intense. Artillery/air support should be requested. The MP security commander should be responsible for taking positive fire and maneuver action to neutralize the enemy.

**Artillery Attack**— If the convoy comes under artillery fire, vehicles must not stop. They

should continue forward as quickly as possible to clear the area.

**Air Attack**— If the convoy comes under air

attack, the vehicles should disperse and attempt to find cover. Personnel should begin firing all available weapons in an anti-aircraft effort.







## Hasty Route Reconnaissance

Reconnaissance is all the directed efforts taken to collect information about the enemy and the area of operations.

Engineer units have the responsibility to undertake both deliberate and hasty route reconnaissance missions. Deliberate reconnaissance provides detailed, technical information; while a hasty route reconnaissance provides information of a limited and less technical nature. Reconnaissance is generally of two types—route and area.

**Route reconnaissance**— directed efforts taken to collect information about the enemy, and the area of operations **along a specific route**.

**Area reconnaissance**— directed efforts taken to collect information about the enemy and the area of operations **within any clearly defined area**.

Because of their mobility, flexibility, and ability to

communicate and rapidly respond, Military Police can provide the commander with an additional resource to undertake hasty route reconnaissance. This will be done in conjunction with the engineer unit commander. This mission can be interfaced with the on-going Military Police missions of convoy escort and circulation control. The information these units can provide is valuable for both tactical intelligence and movement control purposes.

There are several methods of performing reconnaissance. These include ground, aerial, map and air-ground reconnaissance.

### Ground Reconnaissance

Performed on the ground, by traveling over the actual terrain. Although it is the most time-consuming and subject to enemy threat, it provides the most detailed and reliable information.

### Aerial Reconnaissance

This type reconnaissance provides for rapid viewing of the actual terrain with a minimum of threat. More terrain can be checked in less time. It is, however, inefficient in adverse weather.

### Map Reconnaissance

If maps of the terrain are available, this type of reconnaissance provides a preliminary study of the terrain. Maps can provide information on road type, classification, drainage, terrain features, vegetation and natural barriers. Map reliability depends greatly on the age and accuracy of the map.

### Air-Ground Reconnaissance

This is the most desirable type of reconnaissance since it combines the advantages of both methods, especially if the area is a contested battle zone. MPs in the air can direct actions of MPs on the ground to study the most necessary areas or sections of road. They may also provide mutual defense.

## Planning

To be effective, Military Police conducting reconnaissance must be organized and briefed on what information is desired from the reconnaissance. They must have the necessary equipment and be trained in methods used to conduct reconnaissance. In addition to normal mobile patrol equipment, MPs must have a compass, measuring tape, drawing material, maps, overlays and report formats. Information they must receive prior to a reconnaissance includes the following:

Information on the enemy, friendly units and the area.

Proposed circulation control and route security plans to be implemented.

Essential elements of information (EEI) needed.

When, where and how reports are to be rendered. (MPs should use DA Form 1248, Road

Reconnaissance Report, an engineer form, to insure standardization of reporting methods.)

Control measures imposed on them, such as phase lines, checkpoints, contact points and time limits.

Rules of engagement with the enemy.

Organization and equipment.

## Symbols Used

The following are the basic route classification symbols that may be used by Military Police in hasty route reconnaissance. FM 5-36 provides a detailed explanation of symbols used by engineers.

## Types of Roads

**X**— All-weather road. The road is **open all year long** and is only slightly affected by adverse weather conditions. It is usually constructed of concrete, bituminous, brick or stone.

**Y**— All-weather road. **Limited traffic due to weather.** This type road is open in adverse weather with reasonable maintenance. It may be affected by rain, snow or thaw. It is constructed of crushed rock, gravel or lightly metalled surface.

**Z**— Fair-weather road. This type road quickly becomes **unpassable during bad weather** and cannot be kept open with normal maintenance. It is constructed of soil, sand, clay or cinders.

## Limiting Factors

**A**— Road has **no limiting factor.**

**B**— Road has **limiting factors** as indicated by

## **Information Sought by MP On Hasty Route Reconnaissance**

### **Circulation Control**

- Location of dispersion and holding areas.
- Potential alternate routes (lateral, parallel or withdrawal routes).
- Location and effectiveness of defile operations.
- Effect and location of obstacles/barriers on circulation.
  - Areas of routes under enemy observation/fire (ground or air).
  - Man-made obstacles/barriers (roadblocks, buildings, trees).
  - Natural obstacles/barriers (snowslides, washouts, mud, ice).
  - Areas of NBC contamination.
  - Trafficability for wheeled, tracked, amphibious vehicles or aircraft (considering weather, terrain, obstacles).

### **Route Conditions**

- Location and general conditions of route.
  - Driving time and actual distance between points.
  - Type of construction, width, state of repair.
  - Bridges, fords, tunnels.
  - Grade and curves.
- Points of Congestion.
  - Obstacles/barriers, constrictions.
  - Traffic flow, major intersections.
- Location and need for traffic control measures.
  - Major intersections, MSRs, defiles.
  - Need for tactical control points or mobile patrols.
  - Location of existing facilities, units, towns.
  - Alternate or bypass routes.
- Projected effects of weather on routes.

### **Tactical Intelligence**

- Location of friendly units and observed convoy movements.
- Location and type of suspected or potential ambush sites.
- Identification of defensive, counterambush or regrouping areas.
- Observed enemy activity (ground, air, NBC).
- Communication on sites.

the following symbols (any combination may be used).

- ?— An **unknown limiting factor is present**.
- c—Sharp curves.** (Radius less than 200 ft (30m), causes slowing convoys, especially long vehicles. Defile operations may be required.)
- g—Steep gradients.** (Seven percent or more, slows convoys, control may be required at top and bottom to control speed distances and vehicle interval.)
- d—Poor drainage.** (Inadequate ditches, culverts, etc., may require bypassing or rerouting during heavy rain or floods.)
- f—Weak foundation.** (Unstable, loose material, may require certain weight class vehicle be rerouted. Determined by engineers only.)
- s—Rough surface.** (Bump, rutted or potholes mean heavier vehicles must slow down or bypass.)
- j—Excessive camber or superelevation.** (May require defile operations.)

## Construction Material Symbols

- k—** Concrete (generally heavy duty).
- kb—** Bituminous or asphaltic concrete (generally heavy duty).
- p—** Paving brick or stone (generally heavy duty).
- pb—** Bituminous surface on paving brick/stone (generally heavy duty).
- rb—** Bitumen-penetrated macadam; waterbound macadam with superficial asphalt or tar cover (medium duty).
- r—** Waterbound macadam, crushed rock (light duty).
- l—** Gravel or lightly metallated surface (light duty).
- nb—** Bituminous surface treatment on natural earth (light duty).
- n—** Natural earth, soil, clay, cinders (light duty).
- v—** Various other types not mentioned.

## Obstructions

The symbol for obstructions is **(OB)**. Obstructions are any of the following:

- Less than 4.3 meters (14 feet) overhead clearance.
- Widths of traveled way less than required.
- Grades of 7% or more.
- Curves with a radius of 30 meters (100 feet) or , less.
- Fords or ferries.
- Snow blockage (represented by the symbol **T**).
- Flooding (represented by the symbol **W**).

## Basic Road Classification

The formula is standardized in the following format: **Minimum width - route type - lowest military load - obstructions.**

Here are some examples of road classifications:

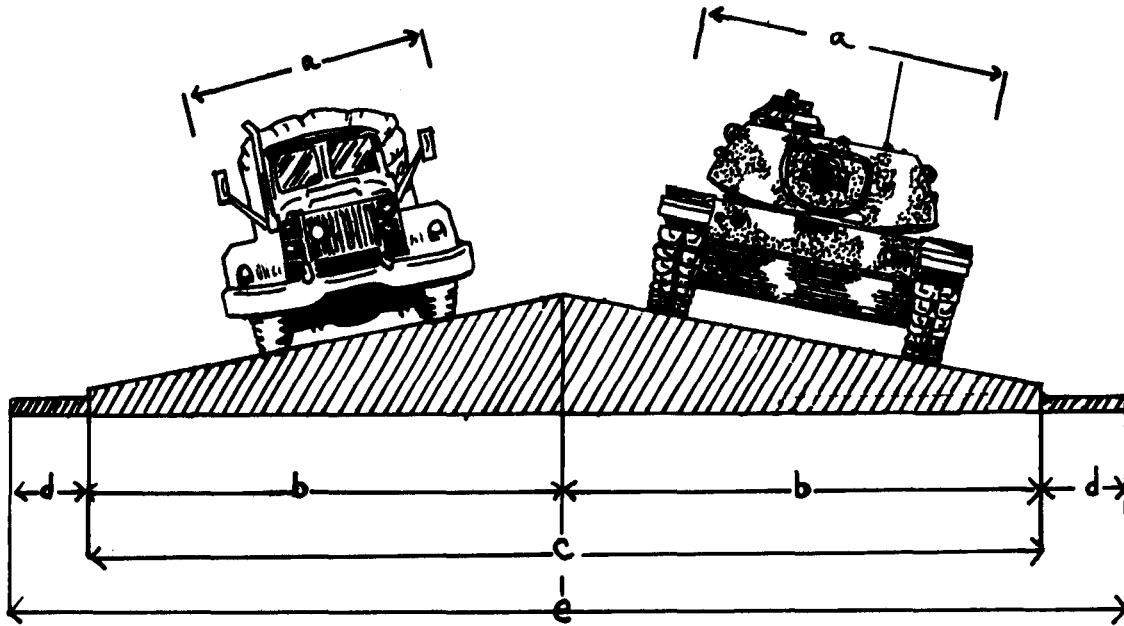
### **20 ft Y 50**

Describes a limited all-weather road with a 20-foot traveled way and load limit class of 50.

### **20 ft Y 50 (OB) (T)**

Describes the same road as the first example with a snow obstruction.

US military and allied vehicles are assigned military load class numbers which represent the affect of each vehicle on a bridge. Military load class numbers for standard Army vehicles are listed in Appendix D, FM 5-36, Route Reconnaissance and Classification. This appendix also contains considerable, information on road and route classifications, reconnaissance operations and deliberate bridge and road reconnaissance.



Wheeled vehicles require 3.5 m (11½ ft) lane width for movement of a column

Track vehicles require 4 m (13 ft)

**LEGEND**

- a. Width of vehicle
- b. Width of lane
- c. Width of traveled way
- d. Width of hard shoulder
- e. Width of grading

*Road and Vehicle Measurements*

More examples:

**7m Y 50 (OB)**

Describes a limited all-weather route with a minimum traveled way of 7 meters, a military load classification of 50 and with obstruction(s).

**10.5m X 120 (OB)**

Describes an all-weather route with a minimum traveled way width of 10.5 meters, which is suitable for double flow traffic of both wheeled and tracked vehicles, a military load classification of 120 with obstruction(s).

**Maps and Overlays**

Military Police have an extensive need for maps and overlays. There are several purposes for maintaining maps, some of which are as follows:

**Traffic Circulation Plan**— Shows the overall plan implemented and maintained by the highway traffic headquarters.

**Traffic Control Plan**— Indicates the general control plan, MP commitments to traffic control, unit locations and service locations. Normally maintained by the MP unit and higher headquarters.

**Circulation Control Point**

**And Mobile Patrol Map**— Maps maintained by MP unit or strip maps maintained by separate elements, concerning their area of operation. They should indicate:

- MP positions and activities.
- Holding areas, roadblocks, checkpoints, defiles, etc.

- Communication sites.
- Road classifications and restrictions.
- Traffic flow and regulations.

All maps are prepared to assist mission accomplishment. They must always be safeguarded. Overlays are used to show information which would clutter up a basic map.



## Combat Support To Tactical Operations

The following discussion is of general employment considerations concerning tactical Military Police support in various combat maneuvers and environments. FM 19-4 provides detailed information on the interface of division, corps and theater Army MP support in the operations discussed.

### Offense

Military Police support during conduct of offensive operations is best characterized as **centralized control with decentralized execution**. The priority of employment is circulation control designed to keep logistical flow moving with throughput and insure timely maneuver of any unit on the battlefield.

**Throughput** refers to a logistical process designed to minimize the number of times a shipment is loaded and unloaded on its way to the forward unit requiring supplies. Trucks loaded at the theater go directly to DISCOM without off-loading.

Some circulation control measures that become important employment considerations during offensive operations are:

Circulation control points in depth to provide for controlled traffic movement.

Timely and wide distribution of route and unit information to reduce the number of stragglers; thereby keeping combat troop strength at the highest possible level.

Insuring rapid passage through de-files.



Convoy security, personal security of commanders and PW control.

## Defense

Defensive operations tend to reduce the flexibility of units. Military Police support is characterized by **centralized control and centralized execution**. *An absolute priority for MP support is insuring that reserve units are able to move to the critical point on the battlefield.* Circulation control measures will be a priority of employment to include the following:

- Increase circulation control points to speed movement of reserves, ammunition and POL resupply.
- Facilitate passage of lines and lateral movement operation.
- Increase emphasis on convoy security, particularly resupply and special weapons.
- Increase straggler control measures to return friendly troops to effective combat status and prevent infiltration by the enemy.
- Increase refugee control measures to provide for either smooth passage through friendly lines, rerouting refugees off MSR to alternate routes, or enforcing standfast orders.

## Retrograde

Retrograde operations are characterized by **centralized control and decentralized execution**. MP support priority goes to combat service support units first, combat support units second, and combat units last. Circulation control considerations are as follows:

Facilitate movement to the rear and passage of lines, to include establishing temporary route signs.

Circulation control points along MSRs, particularly choke points such as defiles, bridges, tunnels and built up areas.

Shift or stop refugee movements on MSRs which may impede military movements.

Reconnaissance to determine alternate routes.

Report and/or engage enemy interdiction along established routes; defending critical points until relieved by combat units.

## Pursuit

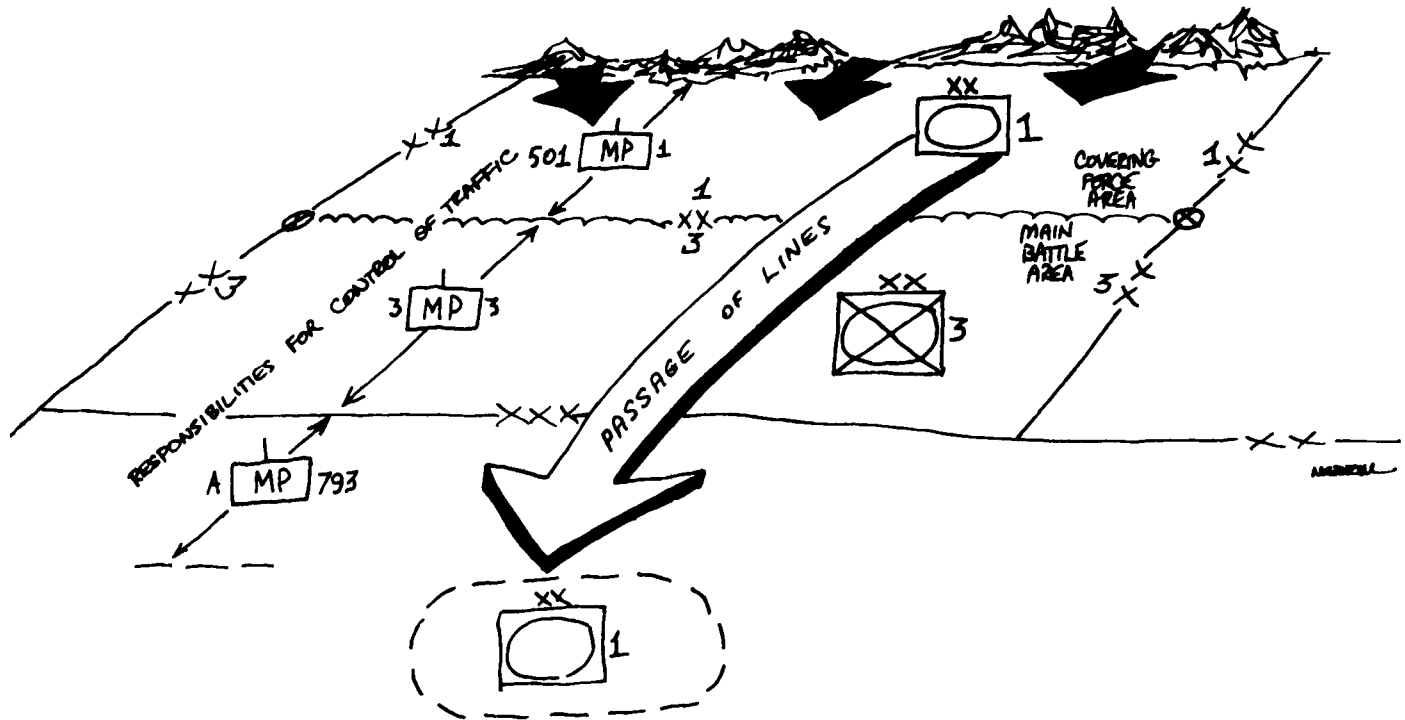
Pursuit operations are usually characterized by extremely rapid movement of armor and mechanized units. Convoy security, straggler and PW control becomes priority MP support missions. **Control and execution will be decentralized** to allow MP elements to stay abreast of the developing tactical situation.

## Passage of Lines And Relief in Place

An operation in which one unit moves through another unit, whether this movement is an attack, retrograde, lateral or relief in place. It requires close coordination between units, especially Military Police units supporting the movement. The coordination of these movements are planned and coordinated at corps level. The circulation control plan is based on the commander's priorities, tactical movement and administrative requirements, and high way regulation/control plans.

The following circulation control plans and measures must be considered:

- Routes to be used.
- Location of assembly areas.



*MP Responsibilities for Passage of Lines*

- Providing for guides to incoming units.
- Insuring that the unit moving through or into the area has priority use of roadways.
- Rigid straggler and refugee control to prevent possible infiltration of enemy units.
- Common use of transportation resources.

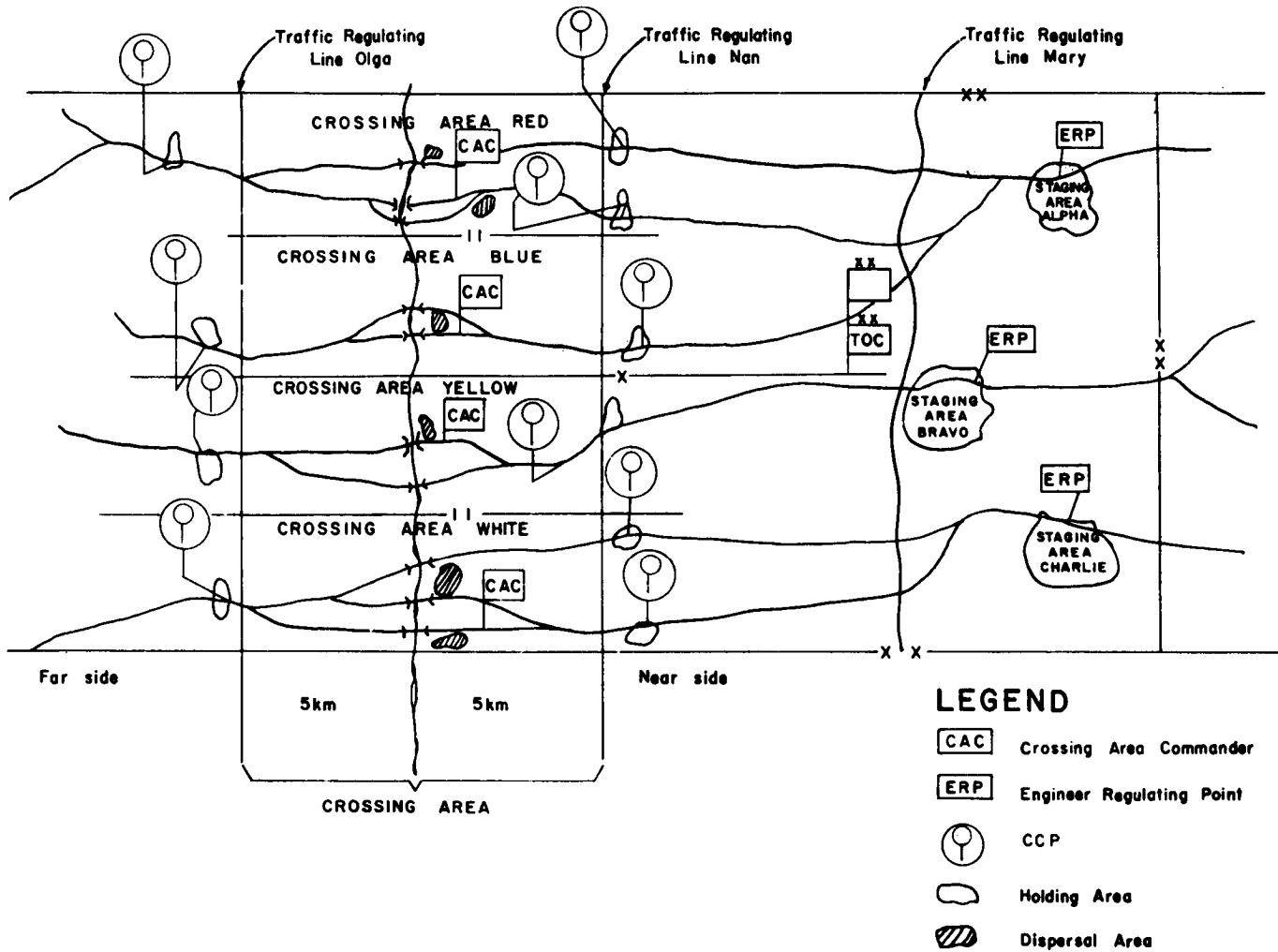
Responsibility for circulation control for vehicle movement remains the responsibility of the unit in an area until it has been relieved. The illustration above demonstrates MP circulation control responsibilities as one division passes through another division to an assembly area.

## River Crossings

A military unit must cross river obstacles quickly

and efficiently to continue on with the attack. Regardless of whether permanent or temporary bridges or fording is the means used to cross a river, firm and continuous control is essential. Military Police and engineers assist the unit commander in establishing this control. The MP's role is to:

- ▶ Insure only authorized movement takes place; priorities are honored; and congestion does not occur. Congestion within an area provides an inviting target for enemy fire.
- ▶ Insure all vehicles clear engineer regulating points (ERPs). The ERP prepares vehicles for the movement and insures class, width and height restrictions are not violated. ERPs maybe located at staging areas, holding areas and dispersal areas.
- ▶ Insure holding areas and routes are established within the designated crossing area and alternate



*Traffic Facilities for a River Crossing*

routes are available and controlled in case of emergencies.

- ▶ Help provide security.
- ▶ Maintain refugee/straggler control.

The Military Police portion of a river crossing operation is organized into three distinct areas—**near side, crossing areas and far side.**

### Near Side

The Near Side is that area from the division rear boundary to a predetermined traffic regulating line. There may be several traffic regulating lines.

They identify the commander’s forward limit of responsibility for traffic control. Within the near side are the **staging area and the holding area.** Military Police in these areas have the mission of insuring all priorities and regulations are met prior to units moving up toward the crossing area.

**Staging Area**— The first location where ERPs are met by crossing units. Staging areas are usually located well back from the river itself. Here vehicles are prepared for the river crossing.

**Holding Area**— A location where Military Police hold traffic to avoid congestion and buildup at crossing site(s). It is usually located just behind (1 to 5 km) the beginning of the area designated as the crossing area.

## Crossing Area

The crossing area is the one in which the river obstacle lies. It is bounded by the front traffic regulating line on the near side and a regulating line located on the far side. A crossing area commander is designated to have sole responsibility and authority in this area. Military Police offer general support to the area commander, and assist in the continuing mission of controlling traffic. A **dispersal area** is a designated area just to the rear of the actual crossing site, and it acts as a final holding area. This area is controlled by Military Police whose operations are controlled by the crossing area commander.

FM 19-4 provides information on the support divisional and corps MP units provide during river crossing operations. In an **opposed crossing**, the division MP company is responsible for the crossing site initially, while the dedicated corps MP company is responsible for support on the near side, excluding the crossing site. As the division breeches the far side, the division MP company displaces with it, to support circulation control on the far side; and the corps MP company assumes responsibility for all near side MP support.

In an **unopposed crossing**, the division MP company moves across initially as a part of the division to assume MP support on the far side with the corps MP company performing all near side support.

When **bridges** are involved, Military Police will be stationed at entrances and exits, as well as on the bridge, if necessary, to insure speeds, load and interval limits, as well as security of the bridge is maintained. There are specific requirements for different types of bridge crossings. It is the responsibility of the engineers to determine these requirements and of the MPs to assist in enforcing them.

## Far Side

The far side is the area across the river. A major control problem here is congestion due to massing of vehicles. Circulation control points (CCPs) and holding areas are established by Military Police to

alleviate congestion and to move vehicles out of the area as quickly as possible. In addition to traffic problems, plans must also be established for evacuation of PW and control of stragglers. FM 19-4 discusses the responsibilities and interface of divisional and corps MP companies supporting a river crossing operation.

## Types of Bridge Crossings

Due to age, structure material and strength, bridges have varying capacities and classifications. Engineers are responsible for determining the capacity of a bridge. Military vehicles are classified by load weight, ranging from 4 through 150. Military Police enforce the capacity decisions made by the engineers. Bridge crossings are classified by two types - **normal and special (caution or risk)**.

### NORMAL BRIDGE CROSSINGS

Normal crossings are made when the vehicle class number is equal to or less than the bridge classification. The crossing may be one-way or two-way. During one-way operations on a two-way bridge, vehicles should drive down the center of the bridge. On-coming traffic must be halted, thereby causing a temporary obstruction to two-way flow of traffic. The minimum vehicle interval is 30.5 meters (100 ft) and the maximum speed is 40 kph (25 mph).

### Special Bridge Crossings

Special crossings occur when the vehicle class number exceeds the bridge classification. They are classified as either caution or risk crossings. They are authorized only under exceptional conditions by the military area authority or civil authorities, if appropriate.

### Caution Crossing

When the vehicle class does not exceed 25 percent of the bridge class, it's a caution crossing. Vehicles must stay in the center of the bridge, maintain a minimum of 50 meters interval and the maximum speed is 8 mph (13 kph). Stopping, accelerating or shifting gears is prohibited.

### Risk Crossing

This is when the vehicle class exceeds 25 percent of

the bridge classification and is authorized only in grave emergencies. An engineer officer must inspect for damage after each crossing and have the damage repaired before traffic resumes. Vehicles must stay in the center and cross one at a time. Maximum speed is 3 miles per hour. Stopping, accelerating, or shifting gears is prohibited. Tanks must steer by using clutch only.

## Retrograde Crossings

Retrograde river crossing operations are characterized by detailed planning and centralized control. Several factors affect the Military Police circulation control mission and the overall operational plan.

**Time** may be at a premium with friendly forces under enemy pressure.

**Maneuver advantage** will belong to the enemy commander.

**Command and control problems** will be difficult, often caused by the need to determine the enemy's courses of action. This will become acute as the battle closes on the river obstacles.

The unit conducting this operation overall is organized into **delaying, crossing area and defending forces**. Military Police are part of the crossing area force. Some circulation control considerations for Military Police are:

- Combat service support units not required to sustain the delay force are moved to the rear at the earliest practical time.
- Use of holding areas is discouraged when troops are massed under enemy fire. The call up of units to cross the river is preplanned and should not exceed the capacity of the crossing area.
- Since crossing times may be preplanned, crossing area sites must be kept open. Unnecessary traffic or personnel must not impede military units. Standfast orders are enforced concerning refugee movements. As the battle closes on the river, absolute enforcement of movement priorities must be met.

## Amphibious Operations

For Military Police to be effective in amphibious operations, they must be **one of the early units to land** on the beachhead. Tentative control procedures and locations must be preplanned. This must be done in coordination with the Navy shore party and beachmasters. Procedures to be used in **dewaterproofing** areas (removal of special equipment emplaced for the operation) must be outlined in advance since this area maybe a point of congestion and a vulnerable target.

MPs must disperse vehicles quickly and move them inland to avoid congestion which may occur as successive waves of units land. Since **road networks are usually not present**, specific guides must be established. Maximum use of temporary signs, engineer tape and tactical control points should be used to create artificial roadways. All **Military Police must be well briefed** with sufficient information about the area to perform effective circulation control. Straggler control points must be established to quickly reunite troops with their units. Prisoner of war collection areas are designated so as not to impede security or traffic flow.

## Airborne Operations

Military Police support of airborne operations covers two distinct locations—the **staging area** and the **airhead**. At the **staging area**, security is of prime importance. Military Police performing circulation control must insure that unnecessary traffic in the staging area is restricted. Non-mission support vehicles and personnel must be rerouted around the staging area. This lessens congestion and denies possible enemy intelligence efforts.

At the **airhead**, PW and command post security are the priority missions of Military Police during initial phases of the operation. As vehicle support increases, traffic control becomes increasingly important. Airborne MP units are required to

control traffic within the airhead and the narrow corridors between the airhead and linkup units. Regular control signs and reflectorized equipment is not used in the airhead. Any necessary temporary signs should be prepared on cloth and issued to MPs prior to the operation.

## Desert Operations

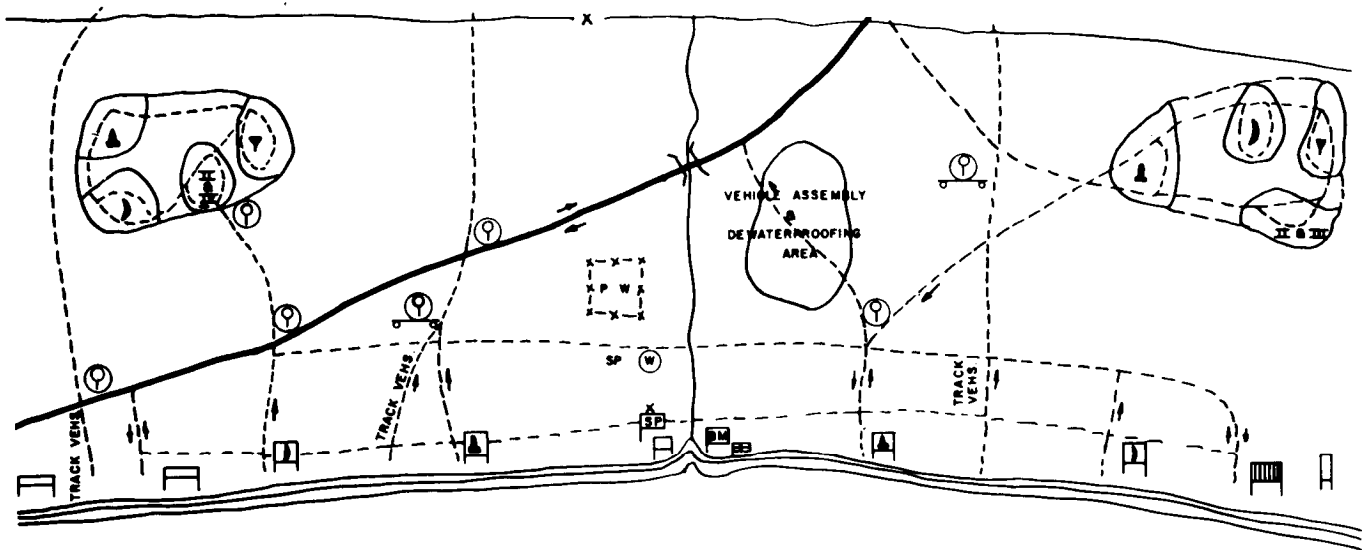
A large number of Military Police are required to effectively control circulation in a desert environment because of the adverse physical conditions and lack of terrain features, established routes, cover and concealment. MPs must be highly trained in land navigation techniques, since a desert operation is highly mobile and changing. Security is a particular problem. Strict enforcement of camouflage and blackout requirements is necessary. Command posts and supply areas may have multiple entries requiring multiple dismount

points and additional Military Police for security purposes.

## Jungle Operations

Circulation control is of prime importance in jungle operations due to the physical environment which characterizes jungles. These characteristics include limited roadways and poor trafficability caused by flooding, erosion and jungle overgrowth. The few roadways available must be kept open for resupply movements; and this requires numerous tactical control points, especially defile operations.

Since resupply is critical, these operations are an inviting target for enemy attack. Convoy and security is important. Coordination between the MP convoy escort element and MP route security element must be preplanned and continuous.



*Sketch of Beach Traffic Circulation Plan*

## Cold Weather And Mountain Operations

In this environment, weather is the prime consideration. Maintenance of equipment is critical. An active buddy system should be employed by Military Police during traffic control activities for mutual support. Once a movement is started, every effort must be maintained to sustain it.

MPs should insure any traffic control signs used do not blend with the ground cover. Roads should have well marked turnout areas for use by vehicles. The passing rule for mountain roads must be enforced. **The vehicle being passed must stop on the most dangerous side, while the passing vehicle passes on the safe side.**

Military Police are used as circulation control points at especially dangerous locations on mountain roads requiring defile operations. Additionally, MPs should be trained and equipped to assist in rescue operations.

## Blackout Operations

Military Police are required to enforce strict control measures during blackout operations. Blackout conditions discussed here are defined as **movement by night with lights that cannot be spotted by enemy observation, but which**

**prevent collisions by showing the position of the vehicle to other road users.**

The following rules are frequently used by vehicles operating under blackout conditions:

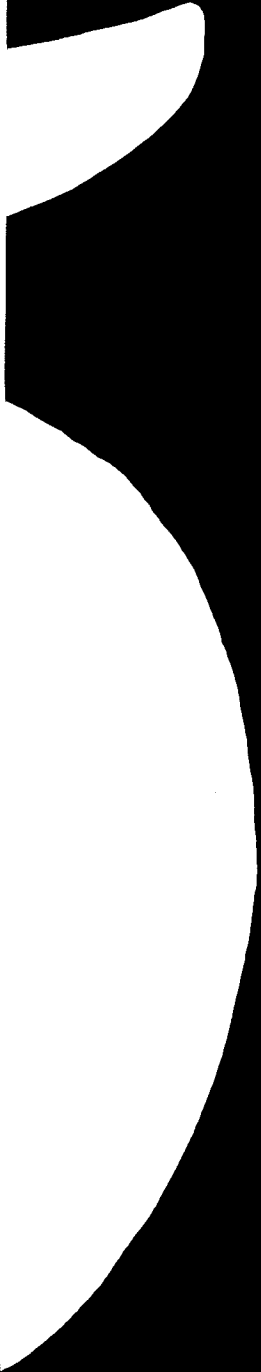
- Vehicle lights indicate vehicle width from the front and rear.
- Vehicles with two wheels have a single white light in front and one red light in the rear.
- Vehicles with three or more wheels display two white or yellow lights in front and two red lights in the rear.
- Devices that diffuse light are used on lighting instruments.
- Lights are also masked to prohibit viewing from the air.
- Lights should be visible at a minimum of 50 meters and a maximum of 300 meters.
- Convoys use two white or yellow lights at the front of each element and two red lights at the rear of each element.

Certain road signs may be required to be illuminated. If so, the following lighting rules apply:

- Signs must have an upper mask to prevent detection of light from above. An observer flying at 150 meters or more must not be able to see the light.
- Light is oriented so the sign is visible at a minimum distance of 100 meters and readable at 30 meters.
- Signs are placed to ensure the downward angled beam of the driving lamp strikes the reflectorized sign.









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**AR 190-24**, Armed Forces Discipline Control Boards and Off-Installation Military Enforcement

**AR 190-29**, Minor Offenses and Uniform Violation Notices—Referred to US District Court

**AR 190-30**, Military Police Investigations

**AR 180-45**, Military Police Records and Forms

**AR 190-46**, Law Enforcement and Confinement Activities

**AR 195-2**, Criminal Investigation Activities

**AR 195-5**, Criminal Investigation Evidence Procedures

**AR 210-20**, Installations, Master Planning for Permanent Army Installations

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- AR 420-72**, Surfaced Areas
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- FM 19-5**, The Military Policeman
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- FM 90-6**, Mountain Operations
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- FM 90-12**, Airborne Operations
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- TC 32-30**, Electronic Warfare Training

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- TM 5-216**, Armored Vehicle Launched Bridge
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## Operations Security

Military police in a theater of operations must be continuously alert for enemy attempts to learn about our plans and capabilities to gain a tactical advantage. The enemy's intelligence collection includes the following four methods.

### HUMINT

**Human Intelligence** — using people to gather information.

Examples:

- ▶ Local population.
- ▶ Intelligence agents disguised as friendly troops to keep track of loose talk, information posted on maps and vehicle windshields, and to gather written materials improperly safeguarded.
- ▶ Ground and aerial reconnaissance.

### SIGINT

**Signal Intelligence** — using devices to intercept our telecommunications and other electronic signal emitters.

Examples:

- Telecommunications intercept by wire tap or radio monitoring.
- Emission monitoring from radar and other signal emitting devices.

### EW

**Electronic Warfare** — using EW assets to intercept, direction find, jam and deceive us.

Examples:

- ★ Using intercept techniques to identify EW targets.
- ★ Using direction finding to locate EW targets.
- ★ Imitative communications and jamming to confuse or cause poor communications security (COMSEC) for our forces.

## PHOTINT

**Photographic Intelligence** — using photographic equipment aboard aircraft and other airborne platforms to gain information.

Examples:

- ▶ Aircraft with infrared and other photo devices.
- ▶ Other airborne platforms to take pictures of US installations and formations.

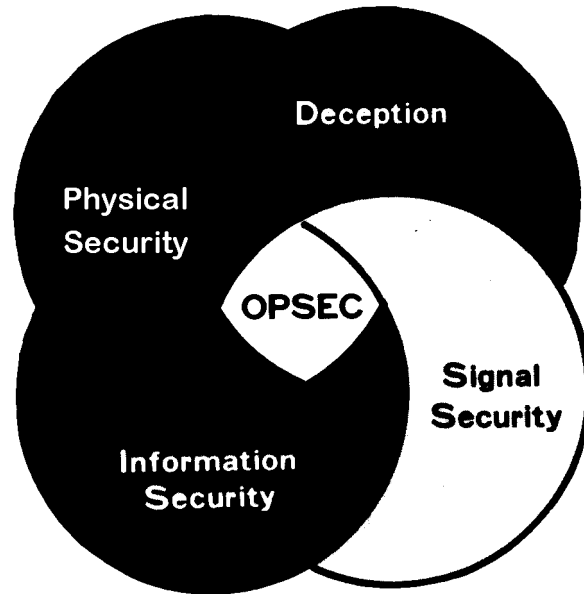
Operations security (OPSEC) is vital to achieving surprise and security on the battlefield. The term applies to all procedures which keep the enemy from collecting information that would give him a tactical advantage.

OPSEC consists of four main categories of security measures—deception, physical security, signal security, and information security. All are interrelated. They must be considered simultaneously for each military operation. Military Police in the theater of operations must understand each type security measure.

■ **Deception** misleads the enemy about our current or intended operations. Deception also includes measures that prevent the enemy from spotting a pattern, or stereotyping our actions. Deception is also used to confuse the enemy when our actions could obviously provide information of our intentions.

Examples of deceptive techniques include:

Camouflage	Demonstration
Smoke	Ruse
Decoy	Feint.



■ **Physical Security** is protecting operational information or activity by using security forces (listening posts, observation posts, patrols, guards), barriers (wire, antitank ditches) and anti-intrusion devices (mines, signal flares). These deny or limit enemy access to installations, facilities, documents and personnel.

■ **Signal Security** protects operational information by practicing communications security (COMSEC) techniques and electronic security (ELSEC) techniques.

COMSEC includes the use of numeral cipher authentication system (DRYAD), operation codes, secure voice equipment and proper radio telephone operator (RTO) procedures.

ELSEC includes radio silence and proper positioning of radars and antennas.

■ **Information Security** prevents disclosures of operation information through written, verbal or graphic communications. Restrictions are placed on personnel, and the release of operational information and documents to safeguard against unintentional release of data important to the enemy.

Military Police units and provost marshal elements must maintain continuous liaison with all staff sections and units which influence their roles and mission functions. All commanders and staff efforts, including intelligence, communications-electronics, logistics, maintenance, and administration, consider OPSEC in providing maximum protection for an operation.

The G2/S2 **estimates the hostile intelligence threat** once the G3/S3 has stated the mission. The S2 coordinates with C-E officers, supporting intelligence and security command (INSCOM) elements, and other appropriate sources to determine the enemy's intelligence collection capabilities and resources.

Of particular importance to MP units and CCPs is information on the following enemy activities:

- Ground reconnaissance
- Civilian espionage agents
- Radio direction finding units
- Recon by airborne platforms
- EW forces.

**Determining sensitive aspects of the operation** is a joint task of G3/S3 and G2/S2. Examples of information which, if known by the enemy, could compromise an operation are:

- Objective(s).
- Units conducting the attack.
- Task organization.
- Command post locations.
- Combat service support activity, location and movement.

Military Police are continuously concerned with the above types of information. They must insure that information is passed only with secure equipment or authorized coding procedures.

**Determining OPSEC vulnerabilities** is done by the G3/S3 concerned with staff actions that if known by the enemy could provide elements of friendly information (EEFI). Examples of such staff actions are:

- Requests for maps of certain areas.
- Publication of movement orders.

- Significant increase in reconnaissance activity of certain areas.
- Movement of combat service support units.

OPSEC countermeasures are applied to give maximum protection to each operation. All four categories of OPSEC are considered, as in the following examples.

### Deception

- ▶ Camouflage vehicles, equipment and personnel.
- ▶ Use smoke.
- ▶ Move logistics at night or during reduced visibility.

### Physical Security

- Lay wire obstacles and minefield.
- Use LP, OP and patrols.
- Limit access to command posts (CP) and tactical operation centers (TOC).
- Use guards and security forces.
- Use challenge and password.
- Practice convoy security.

### Information Security

- ◀ Briefing all persons on SAEDA.
- ◀ Limit operational information to persons with need to know.
- ◀ Refrain from posting operational information on vehicle windshields and other nonsecure areas.
- ◀ Enforce light and noise discipline.

### Signal Security

- ★ Impose radio silence.
- ★ Use contents of the CEOI properly.
- ★ Use COMSEC equipment and OPCODES (DRYAD).
- ★ Operators use only essential radiating power on radios.



★ Use secure voice equipment.

★ Minimize all electrically transmitted messages.

★ Use messengers whenever possible.

★ Use wire communication whenever possible.



## Traffic Point Control

Effective control of traffic requires that basic rules be followed so traffic will proceed in an orderly manner. These basic rules are based on command requirements and common sense.

The primary goals sought in point control of traffic are to insure the orderly movement of traffic in accordance with the traffic control plan, prevent unnecessary delay and meet all command safety requirements.

Prior to instructing a road user to move or turn, look at the traffic to insure the driver can respond to the signal without confusion or danger.

When using hand signals, Military Police must apply the following basic rules:

- ★ Assume a correct stance for controlling traffic, thus reducing fatigue and presenting a good appearance.
- ★ Execute distinct and complete Signals. Each signal made by the Military Police must be understood by the road user.
- ★ If it appears the driver does not understand, repeat the signal.

The key rule in point control of traffic is to **LOOK** carefully at the developing traffic situation; **EXECUTE** the appropriate signal properly and precisely; and then **COMPLETE** each signal distinctly.



*Figure 1*

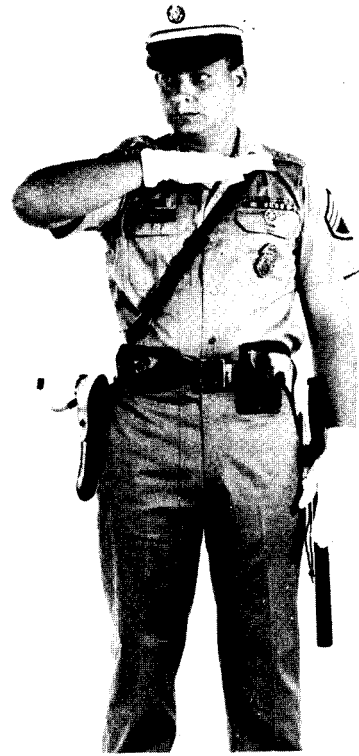
*Basic Stance for Traffic Control*

Stand with your feet approximately shoulder width apart so your weight is evenly distributed on both feet. Hands and arms should hang naturally at your sides.

Head and body are erect but not stiff. Keep your feet planted in position, but do not lock your knees or tense your body.



*Figure 2*



*Figure 3*

***Direct Traffic From the Right To Proceed Straight Ahead***

Look to the right.

Extend your right arm up and out to the right side so it is parallel to the ground. Your right palm is facing up and your hand is straight, fingers extended and joined (Figure 2).

Without moving your upper arm, use your elbow as a fixed axis and rotate your right forearm across the front of your body so your hand stops just below your chin with the palm facing down (Figure 3).

Complete the signal by dropping your arm smartly and returning to the basic stance.



*Figure 4*



*Figure 5*

***Direct Traffic From Left To Proceed Straight Ahead***

Look to the left.

Extend your left arm up and out to the left side until parallel to the ground. Your left palm faces up and the hand is straight, fingers extended and joined (Figure 4).

Without moving your upper arm, use your elbow as a fixed axis and rotate your left forearm across the front of your body so your hand stops just below your chin with the palm facing down (Figure 5).

Complete by dropping your arm smartly and returning to the basic stance.



*Figure 6*

### *Stop Traffic From the Right*

Look to the right.

Thrust your right arm to the right and up, bending the elbow slightly. Fingers are extended and joined; palm is flat and facing out to the right with the entire surface clearly visible to oncoming traffic. Your elbow should be bent and at eye level so the hand is well above your headgear.

When putting up a stop sign, allow the driver time to react and bring his vehicle to a stop.



*Figure 7*

### *Stop Traffic From the Left*

Look to the left.

Thrust your left arm to the left and up, bending the elbow slightly. Fingers are extended and joined; palm is flat and facing out to the left with the entire surface clearly visible to oncoming traffic.

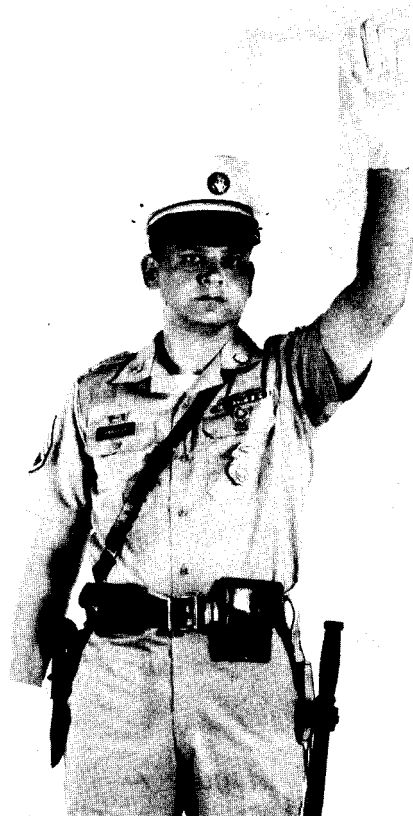


Figure 8

### *Stop traffic From the Front*

Look to the front.

Raise your left arm up and out to the front, keeping the fingers joined and extended with palm facing outward so your entire hand is clearly visible to oncoming traffic. Your elbow should be bent and at eye level so the hand is well above your headgear.

When the traffic is halted, complete the signal by dropping your arm to your side.

**Note: You raise your left arm because traffic from your front approaches on your left side.**



Figure 9



Figure 10

### *Stop Traffic From the Rear*

Bend your left knee slightly and twist your body to the right, turning your head and eyes to the right rear; do not move your feet.

Raise your right arm up and out to the rear with your fingers extended and joined and palm facing traffic to the rear, keeping your elbow bent and at eye level.

When the traffic is halted, complete the signal by dropping your arm and returning to the basic stance.

Stop signals to the front and rear are completed by simply dropping your arm and returning to the basic stance.



*Figure 11*



*Figure 12*

*Direct Traffic From the Left To Turn Right*

Look to the left.

Extend your left arm straight out to the left so it is parallel to the ground. Point the first two fingers of your left hand at the vehicle to turn. Palms facing forward.

Without turning your shoulders or body, sweep your left arm 8 to 10 inches to the rear (to the driver's right and to your left).

Complete by dropping your arm and returning to the basic stance.





*Figure 13*



*Figure 14*

*Direct Traffic From the Right To Turn Right*

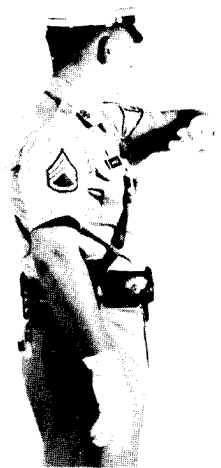
Look to the right.

Extend your right arm straight out to the right so it is parallel to the ground. Point the first two fingers of your right hand at the vehicle to turn. Palm facing forward.

Move your arm in a sweeping motion 90 degrees to the front, keeping your arm parallel to the ground.

Complete by dropping your arm smartly to your side, returning to the basic stance.

**Note: Right turns normally are referred to as blending turns.**

*Figure 16**Figure 15**Figure 17**Figure 18*

### *Direct Traffic From the Right To Turn Left*

Look to the right and determine the driver's intent to turn.

Look to the left and halt traffic by putting up a stop signal. Make sure your left hand is well above your headgear (Figure 15).

Holding the stop signal in position on the left, look back to the right and extend your right arm out to the right side, parallel to the ground, pointing the first two fingers of your right hand at the vehicle to turn (Figure 16).

**Note:** Left turns are normally referred to as conflicting turns.

Without turning your shoulders or body, sweep your right arm 8 to 10 inches to the rear to indicate the turn (Figure 17).

Complete the turn signal by dropping your right arm to your side.

Watch the vehicle making the turn until it has cleared the intersection, then look back to the left.

Convert the stop signal to a come-through signal by rotating your palm inward, rotating the forearm across the front of your body until your hand is just below your chin, and dropping your arm smartly to the side (Figure 18).



Figure 19



Figure 20



Figure 21



Figure 22

### *Direct Traffic From the Left To Turn Left*

Look to the left to determine the driver's intent to turn.

Look to the right and halt traffic by putting up a stop signal (Figure 19).

Holding the stop signal in place on the right, look back to the left and extend your left arm straight out to the side, pointing your first two fingers at the vehicle to turn (Figure 20).

Move your left arm in a sweeping motion 90 degrees to the front, keeping your arm parallel to the ground (Figure 21).

Complete the turn signal by dropping your left arm to your side.

Watch the turning vehicle until it has cleared the intersection, then look back to the right.

Convert the stop signal to a come-through signal by rotating your right palm inward, rotating your right forearm across the front of your body until your hand is just below your chin, and dropping the arm to your side (Figure 22).

*Figure 24**Figure 23**Figure 25**Figure 26*

### *Change the Flow of Traffic*

Look to the right, put up a stop signal with your right arm, and hold that signal in position (Figure 23).

Look to the left, put up a stop signal with your right arm, and hold it in position (Figure 24).

Turn your body 90 degrees to the right or left so you face the traffic just stopped.

Look to the left and convert your left arm stop signal to a come-through signal by rotating your palm 180 degrees so it faces inward. With your elbow fixed, rotate your forearm across in front of your body until

the hand is just under your chin, palm facing down (Figure 25). Complete signal by dropping your arm.

Look to the right and convert your right arm stop signal to a come-through signal by rotating the hand 180 degrees so your palm faces inward. With your elbow fixed, rotate your forearm across in front of your body until the hand is just under your chin, palm facing down (Figure 26).

Complete the signal by dropping your arm and returning to the basic stance.



*Figure 27*

***Basic Stance For Directing Traffic With Baton Flashlights***

The basic stance for traffic control remains the same except the MP holds a baton flashlight in each hand,

keeping the thumb on the switch at all times (Figure 27).



Figure 28



Figure 29

Figure 28

Figure 29

**Stop Traffic From the Right**

Look to the right.

Bend your right elbow and bring the baton to a vertical position directly in front of your face.

Switch the light on and slowly move the baton back and forth in a 45 degree arc (Figure 28 & 29).

When traffic halts, stop the movement and switch the light off.



Figure 30



Figure 31

**Stop Traffic From the Left**

Look to the left.

Bend your left elbow and bring the baton to a vertical position in front of your face.

Switch the light on and slowly move the baton back and forth in a 45 degree arc (Figure 30 & 31).

When traffic halts, stop the movement and switch the light off.



*Figure 32*

***Stop Traffic From the Front***

Look to the front.

Bend your left elbow and bring the baton into a vertical position directly in front of your face (Figure 32).

Switch the light on and move the baton slowly back and forth in front of your face in a 45 degree arc.

When the traffic halts, stop the motion of the light and switch it off.



*Figure 33*

***Stop Traffic From the Rear***

Bend your left knee and twist your body to the right, turning your head and eyes to the rear. Do not move your feet (Figure 33).

Bend your right elbow and bring the baton into a vertical position directly in front of your face.

Switch the light on and move the baton slowly in front of your face in a 45 degree arc.

When traffic halts, stop the movement of the light, switch the light off, and return to the basic stance.



*Figure 34*



*Figure 35*

***Direct Traffic From the Right  
To Proceed***

Look to the right

Extend your right arm out to the side, parallel to the ground, with the cone of the baton pointed to the front (Figure 34).

Switch the light on and slowly lower your right arm to your side, keeping the baton pointed to the front (Figure 35).

Switch the light off to complete.



*Figure 36*



*Figure 37*

***Direct Traffic From the Left  
To Proceed***

Look to the left.

Extend your left arm out to the side, parallel to the ground, with the palm up and the cone of the baton pointed to the rear (Figure 36).

Switch the light on and slowly lower your left arm to your side, keeping the baton pointed to the rear (Figure 37).

Switch the light off to complete.





Figure 38



Figure 39

*Direct Traffic From the Right  
To Turn Right*

Look to the right.

Extend your right arm out to the right side, parallel to the ground, with the cone of the baton pointed to the front. Switch the light on (Figure 38).

Sweep your right arm 90 degrees to the front, simultaneously turning your wrist to the right so that the cone remains pointed to the front (Figure 39).

When the baton points directly to the front, stop the movement, switch the light off, and drop your arm.

**Note: Right turns are normally referred to as blending turns.**



Figure 40



Figure 41

*Direct Traffic From the Left  
To Turn Right*

Look to the left.

Extend your left arm out to the side, parallel to the ground, with the palm up and the baton pointed to the rear (Figure 40).

Switch the light on and sweep your arm to the rear 8 to 10 inches (Figure 41).

Switch the light off and drop your arm.



Figure 42



Figure 43



Figure 44



Figure 45

### *Direct Traffic From the Right To Turn Left*

Look to the right.

Look to the left and signal traffic to stop. When the traffic stops, switch the light off and keep the baton in the vertical position (Figure 42).

Look to the right and extend your right arm out and to the side, parallel to the ground, with the palm up and the cone pointed to the rear (your right and the driver's left). Switch the light on (Figure 43).

Sweep your right arm 8 to 10 inches to the rear and switch the light off (Figure 44).

Drop your right arm and watch the turning vehicle until it has cleared the intersection.

Look to the left and extend your left arm out to the side, parallel to the ground, with the cone pointed to the rear. Switch the light on and signal the traffic to proceed (Figure 45).

**Note: Left turns are normally referred to as conflicting turns.**



Figure 46



Figure 47



Figure 48



Figure 49

### *Direct Traffic From the Left To Turn Left*

Look to the left.

Look to the right and signal traffic to stop. When the traffic stops, switch the light off and keep the baton in the vertical position (Figure 46).

Look to the left and extend your left arm out to the side, parallel to the ground, with the cone pointed to the front. Switch the light on (Figure 47).

Sweep your left arm to the front, simultaneously turning your wrist to the left. When the cone points directly to the front, switch the light off and drop your left arm (Figure 48).

Watch the turning vehicle until it has cleared the intersection.

Look to the right and extend your right arm out to the side with the baton pointed to the front. Switch the light on and signal the traffic to proceed (Figure 49).



*Figure 50*



*Figure 51*



*Figure 52*



*Figure 53*

### *Change the Flow of Traffic*

Look to the right and signal the traffic to stop. Switch the light off and hold the baton in the vertical position (Figure 50).

Look to the left and signal the traffic to stop. Switch the light off and hold the baton in the vertical position (Figure 51).

Turn your body to the right or left 90 degrees so that you face the traffic just stopped.

Look to the right and extend your right arm out to the side with the baton pointed to the front. Switch the light on and signal the traffic to proceed (Figure 52).

Look to the left and extend your left arm out to the side with the baton pointed to the rear. Switch the light on and signal the traffic to proceed (Figure 53).



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